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Architecture



under

Nationalism.

BY

J. PICKERING PUTNAM

MEMBER OF THE BOSTON SOCIETY OF ARCHITECTS.

BOSTON
TICKNOR & COMPANY
211 Tremont Street
1891

THE NATIONALIST.

A monthly magazine devoted to the Nationalization of Industry and thereby the promotion of the Brotherhood of Humanity.

EDITED BY JOHN STORER COBB.

This is the only magazine in the United States dedicated to the discussion and dissemination of the principles of nationalism. It has among its contributors many representative men and women, among whom may be mentioned Edward Bellamy, Edward Everett Hale, Thaddeus B. Wakeman, Mary A. Livermore, Charlotte Perkins Stetson, Sylvester Baxter, Henry Austin, Rev. Solomon Schindler, Abby Morton Diaz, J. Foster Biscoe, and others who would make too long a list of distinguished names for insertion here.

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MEMBER OF THE BOSTON SOCIETY OF ARCHITECTS

Author of

“The Principles of House Drainage” “The Open Fire-Place in All Ages”

“Improved Plumbing Appliances” etc. etc.

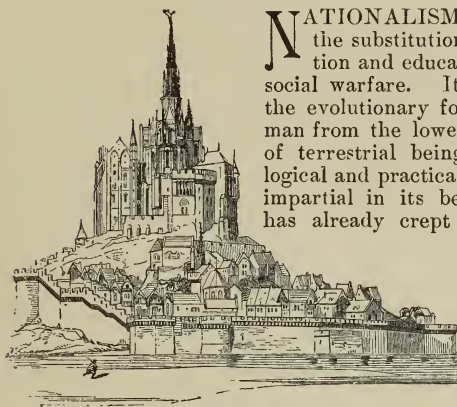
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Architecture Under Nationalism.



NATIONALISM may be defined as the substitution of universal coöperation and education for industrial and social warfare. It is a continuation of the evolutionary force which has raised man from the lower to the highest form of terrestrial beings. It is so strictly logical and practical in all its aspects; so impartial in its benefits to all classes; has already crept so deeply into the minds and hearts of thinking people in both continents, and has made such remarkable progress of late, in this country, especially on the Pacific coast,

in arousing the people to definite action with a view to hastening its practical introduction, that we are forced to believe the present generation will see a great change in the social organism due to its influence. Nevertheless, there still exist many curious popular misconceptions as to its principles; and it is necessary to refer briefly to these, before entering upon the consideration of the particular branch of the subject we have chosen.

Perhaps the most common error in the popular conception of Nationalism is that it will benefit chiefly, if not only, the poorer classes, increasing their wealth at the expense of the richer. Whereas, a close study of its principles will clearly show that the wealthiest will in many respects, be the greatest gainers, not alone because, without the least diminution of their material possessions, they will be freed from association with a great unwashed and untutored public whom they both dislike and fear, but also on account of the many dangers and responsibilities inseparable from extraordinary wealth.

For eighteen hundred years, at least, it has been pronounced a difficult feat for a man possessing wealth much greater than that of his neighbors to enter the Kingdom of Heaven, which would seem to indicate that Heaven is not a plutocracy but rather a commonwealth.

Another popular error, based on the first, is that the principal impediment to the introduction of nationalism is selfishness, particularly on the part of the "capitalists" who control the machinery of production. For, since it is easy for any one who will investigate the subject, to see that all, without exception, will be immensely benefited thereby, it becomes clear that the real impediment is ignorance, and that selfishness will have the very opposite effect, and greatly aid its introduction as soon as this ignorance is removed.

Finally it is an error to suppose that nationalists either desire or require to appropriate, without just recompense, for the common use, property which is now possessed by individuals; to remove from office efficient workers in any calling; or to disturb the wheels of industry by any sudden, ill-considered action. The successful business man will retain all the advantages his industry and thrift have brought him, with this immeasurable gain, that he will be free from all worries and burdensome responsibilities now necessarily connected with them.

Considered in its relation to the architectural art, I propose to review, first the general, and then the specific advantages which nationalism will bring; and, in this material age, we may appropriately consider the material advantages first and the intellectual and moral ones afterwards.

That industrial coöperation enormously increases the economy of production is evident, and the trusts and great combinations of to-day seem created for the useful purpose of presenting to the world striking practical illustrations of the fact. But the extent to which that increase would be carried by a coöperation which is general throughout the nation, is likely to exceed the expectations of the most enthusiastic. With the imperfect statistics provided us at the present time, it is impossible to obtain anything more than approximate figures. But a safe *minimum* of gain may be reached, and even this minimum seems at first statement so monstrous that I have repeatedly refused to accept my own deductions, until again and again forced to do so by the overpowering weight of evidence.

I am convinced that it is understating the facts to say that at least nine-tenths of the energy exerted to-day is utterly wasted; or that, in other words, this country would produce ten times as much wealth annually under Nationalism with the same quality of machinery as it does to-day.

Authorities do not entirely agree as to the aggregate amount of wealth annually produced in the United States. Mr. Joseph Nimmo, Jr., Chief of the Bureau of Statistics, estimates the total value of the annual product of the last census year, 1880, as over ten thousand million dollars. Mr. Edward Atkinson placed it at somewhat under ten thousand millions, but presents some very ingenious and convincing considerations which show that his estimates are not likely to be too high (see Atkinson's "*Distribution of Products*" published by G. P. Putnam's Sons, New York, 1885).

The various items making up this total may be estimated as follows:

Manufactures:—

Total value of products of manufactures as given in the U. S. Census Report for 1880, after deducting the value of the materials (which are included under the subsequent headings)... 1,972,756,022

Agriculture:—

Estimate of Mr. J. R. Dodge, Statistician of the Department of Agriculture of the United States..... 3,726,321,422

Illuminating gas (partly estimated). From Mr. Nimmo's figures...	30,000,000
Mining	236,275,408
Forestry.....	455,000,000
Fisheries.....	43,046,053
Petroleum (Manufactured Product).....	44,000,000

Value of all materials which are not included in the above: .
 Products of Home Work of Women, and of Factories producing .
 less than \$500,00 not included in the Census; Buildings, Books,...
 Newspapers, Works of Art and Education, Manufactures of...
 Railroad Companies, and sundry other items..... 3,500,000,000

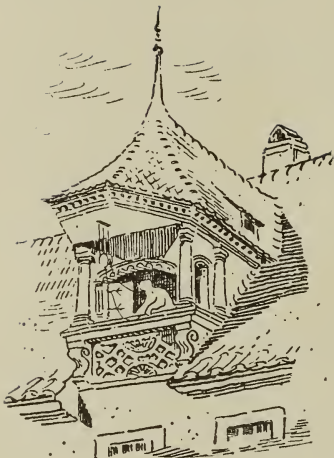
Total..... 10,007,409,525

Assuming this estimate of ten thousand millions to be approximately correct for the total wealth production of 1880, a ten-fold increase under nationalism would raise the national wealth to a hundred thousand millions. This amount, paid yearly in dividends to the fifty million citizens of the same census year, as stockholders in the great national corporation, would give each an annual income of \$2,000, and as a dollar under nationalism will go at least twice as far as the same amount under the competitive system, on account of the fact that all education and countless objects of entertainment and luxury, now attainable only by the very rich, will be furnished the people by the nation free, this amount will have a value very much greater. Yet a still more important consideration in giving real value to this income lies in the fact that the whole of it may be, and is expected to be, enjoyed each year without anxiety for the future. A dollar which may be spent is worth two which must be laid up, and we shall see as we proceed that our income becomes again much greater in actual pleasure and profit-producing capacity. All expenditures for charities of every kind, and all for mere ostentation will evidently cease to be required under Nationalism; neither charity nor ostentation having any place there, and the extinction of these two factors will wonderfully modify men's ideas as to the importance of a large income.

Moreover, almost exactly half the population of the United States according to the last census, were under twenty-one years of age, and about a quarter were under ten years of age. Assuming that infants and youths will require a smaller dividend than adults, there will be a large surplus each year to be devoted partly to increasing the dividend of the adults and partly to paying the expenses of education and making public improvements which will be sources of profit and pleasure free to all and thus reduce the need of money for each.

Two people uniting in marriage will double this yearly means of support, and, moreover, every child born to them will still further increase the financial stability of the household.

Let us examine some of the principal wastes due to the existing industrial system, and see if the above estimates can be substantiated.



I DEFINE *wasted energy* as that which produces no useful results, and arrive at the estimate of waste upon which I have based my calculations as follows :

First comes a great loss in our distributing system. In the year of our last census, there were over three hundred dry-goods distributing stores in Boston alone, five hundred shoe stores, and over a thousand grocers' shops, where a single one under Nationalism would have sufficed for each, combined with a few central sample-buildings for the display of all the goods used by the nation. Accordingly a very small percentage of the outlay and persons employed in distributing these goods in Boston, would have sufficed for the work.

In the United States, in 1880, more than a tenth of the whole working population of seventeen million people spent their whole working time in selling and distributing goods. But a small fraction of this great army would have sufficed, under Nationalism, to have done the work and to have done it infinitely more satisfactorily. This whole army of tradesmen, commercial drummers and peddlers would be transferred to the field of useful production. A simple system of reliable national illustrated catalogues, alphabetically arranged, of all the goods used by the people would take the place of the very unreliable travelling drummers. A few sample-stores with a number of distributing stores in each city or county, would take the place of the myriads of shops now required.

The national catalogues become practical cyclopædias of the most perfect form, giving concise scientific descriptions of every article known and used in the nation, with its actual value, the few fluctuations in cost being published periodically in separate sheets like the discount sheets of our manufacturers of to-day.

With these catalogues and the modern improvements in transportation enabling travellers and merchandise to be transported safely at a speed of from one to two hundred miles an hour (a speed which experiments seem to show will be practicable), the great central sample and distributing stores of the nation need not be

duplicated in every large town. Methods of distributing merchandise with marvellous rapidity, safety and economy have already been devised, and a system which will now deliver packages with almost lightning speed about a large city will equally conveniently distribute them within a radius of ten or twenty miles with a very trifling increase of time in transit. Accordingly the great national sample and distributing stores, placed at a few convenient points in each State or National District, with, perhaps, small receiving-stations in each town, will supply all the intervening territory with the greatest ease and convenience, and a few hundred such centres would suffice for the entire country.

Careful estimates place the cost of the *commercial travellers* alone in this country at over a billion dollars a year, (see last chapter).

In view of the above considerations, I think it safe to place the waste of energy under the competitive system due to the item of distribution at one-tenth, at least, of the whole amount exerted.

The next great loss of energy comes from the increased labor required of every citizen in the effort to supply his wants in purchasing the goods furnished by the unscientific distributing system just considered.

A single instance taken from a single department of a single industry must serve for illustration, and no more representative industry could be selected than that which forms the subject of our paper.

An architect desires and is expected to provide his client with the best of everything the market affords up to the extent of the appropriation. Here the conscientious architect finds one of the greatest and most distressing elements in the practice of his profession, since it is utterly impossible for him ever to feel certain that he has fulfilled his duty in this respect, however great his effort. The wisdom of a Solomon and strength of a Hercules would miserably fail in the effort to justly weigh the conflicting claims for superiority of a hundred competitors in each of the thousand items of labor and material entering into the construction of a modern house. The inventive genius of the country; in spite of the discouraging effect of a proverbially inadequate reward for the inventor, still turns out improvements with marvellous and constantly increasing rapidity; the patented inventions in the United States in the past year alone numbering *over twenty-three thousand*. To keep thoroughly informed in the most important of these, even under the most perfect system of public expert valuation and classification would involve constant vigilance and great study on the part of the architect.

But to expect every individual practitioner to extricate independently from all this mass of invention the best, and to do so with no other guide than the conflicting claims of those who are admittedly the most biased, is to expect an evident impossibility. Yet this is exactly what is expected of the architect to-day.

I shall take my illustration from the department of sanitary plumbing, in which I have recently been obliged to make a number of particularly careful original experiments as the only way to obtain the very information above indicated—information which could have been obtained much easier and better, in the interest of all the people at once, *by the State*.

I found a great diversity of opinion existing among authorities as

to many of the most important points connected with this branch of building, and a constantly increasing complication in the methods of piping in vogue, particularly in trap-venting, a complication which my investigations convinced me was not only unnecessary but even dangerous. I found that the special trap-vent pipe, so long as it performed its office of producing a ventilating current over the water-seal of the trap, tended to destroy this seal by evaporation and to open a direct avenue into the house for the so-called sewer-gas; that the efficacy of the vent-pipe was easily nullified by friction and clogging, and that its use produced a false sense of security which prevented the adoption of more reliable precautions.

These expensive and dangerous complications were, in many places, actually enforced by legislation, involving a pecuniary loss on the part of the public of a very large sum, amounting in Boston alone during the last few years, according to estimates based on the City Inspector's Building Reports, to an average of about \$50,000 a year. As the law benefits the dealers in lead and iron pipe, a powerful element exists in favor of its perpetuation and extension to other cities.

Under nationalism the drainage and plumbing of our houses being in the hands of the people, as is already partly the case with the water-supply, this condition of things would not for a moment exist, since it would be for the interest of all to have the simplest and best system of plumbing everywhere adopted, and the necessary investigations to determine what that system really was, at once made by the nation. The cost of such an investigation would be but a minute fractional part of the annual loss now sustained by the people on account of its omission.

Already the best authorities are opposed to the trap-vent law, in view of the great improvements made during the last few years, since the law was framed, in plumbing methods and appliances, and several cities have lately repealed it. But in Boston it still exists to the disgrace of the building professions, and it is likely to remain so until the public come to a proper sense of the evil and insist upon reform.¹

We will suppose that it has been rumored among the ever vigilant manufacturers' sales-agents that our architect is about to compile his plumbing specifications for some building. Instantly a half-a-dozen eager drummers, armed with brass, scamper to his office and some of the most persistent of them succeed after many vain attempts in gaining access to his ear. Those manufacturers who have the least eloquent drummers, or who live at the greatest distance from the architect's office, or who do not happen to hear at the right time of the writing of this particular specification, stand at a considerable

It is gratifying to see that our Building Inspector, Damrell, in his last annual report (for 1889), wisely calls the attention of the City Council to this evil, in the following emphatic language: "Plumbing is a question of growing importance for it has to do with the safety of our dwellings, school and business houses; and whether the present method of ventilating is not prejudicial to health is a matter of serious moment, and I respectfully call your attention to the ordinance regulating it, believing that it is necessary for the best interests of the city to amend and revise said ordinance before the revision of the ordinances now in process is completed and accepted."

disadvantage, for how can a new article be of any great merit whose proprietor cannot afford to have special agents in all the principal cities and towns throughout the land? Still the architect does not feel at liberty to abide exclusively by the somewhat colored and mutually contradictory representations of the agents. He is forced to make a special study in books and catalogues of some of the latest improvements, and to consult a number of plumbers and sanitary experts. He finds in the catalogues, innumerable different kinds of fittings in every branch of the work, each declared to be in every particular the very best. He invites the various manufacturers to demonstrate the truth of their claims, and studies the arguments by which each proves the utter falsity and absurdity of the pretensions of all the rest. By a process of exclusion, he finally settles down to two or three kinds, and the agents for these fortunate specimens, offer to furnish him free of charge (he being an architect of influence) with a sample of his goods, set them up under water-connection in his office if necessary, for his personal trial. At last after a considerable amount of patient experimenting and a prodigious expenditure of time and very little satisfaction, he makes his final selection. It is the same in the choice of every article of construction and workmanship, from foundation to chimney-top.

This foolish waste of energy will be entirely avoided under nationalism, all industries being conducted by the cooperative commonwealth in a single perfected organization administered in accordance with the simple principles taught us by the great corporations of to-day, but free from the corrupting influences and wasteful competition by which the latter are crippled. No opportunity will be offered for intentionally false or exaggerated representations as to the value of any production, since all inventions will be owned, manufactured and sold by the commonwealth, the inventors being rewarded by royalties and special honors bestowed by the people. The amount of the royalty will be determined by the popular recognition of the value of the invention as shown in their use of it and by its merit as to ingenuity, novelty and scientific importance as determined by experts appointed in the same manner with other Government employés.

It would, of course, be foolish for any one to attempt to foretell with any pretensions at accuracy the details of a future social state so radically different from and immeasurably above the present. But nationalists are accused of being only theorists, unable to suggest any practical steps by which their vision may be realized; and as an answer to this accusation we are justified in pointing out at least a possible form under which the ideal may appear, without claiming or believing that this form is necessarily the only one it can assume.

It is then possible, and, I believe, even probable, that the inventor in the future will receive his recompense directly from the State, and that the recompense will be certain, prompt and just, instead of the reverse as is now the case, and as must necessarily be, the case under the competitive principle, since the very qualities and conditions which fit a man for being an inventor unfit him for exploiting his invention.

Mr. Bellamy has outlined with his usual good practical sense and great ingenuity in his "*Looking Backward*" a possible and, in my

mind, very probable way in which books will be published in the co-operative commonwealth. The first cost of printing is defrayed by the author, after which the book is placed on sale by the nation. "The price," says Dr. Leete, "of every book is made up of the cost of its publication with a royalty for the author. The amount of this royalty is set to his credit, and he is discharged from other service to the nation for so long a period as this credit at the rate of allowance for the support of citizens shall suffice to support him." As with the author so it will be with the inventor. The price of the experimental work is defrayed by him, after which the invention is duly classified, catalogued and placed on sale by the nation. The price of the article is made up of the cost of its manufacture with a royalty for the inventor, who is discharged from other service to the nation, as long as these royalties serve to support him. This system is admirably calculated to encourage true inventive genius and to discourage its mere semblance; for all will be free to select the work for which they are most fitted without misgivings as to their support, and since the acquisition of extraordinary wealth will be neither desirable nor possible, the unhealthy incentive which dazzles the eyes of most of the would-be inventors of to-day, will cease to exist, and with it also the unhealthy crop of useless inventions which burden our patent reports. Those inventions which, under nationalism, will find their way into the national catalogues, will then well be worth the cost to the people of their classification and printing. As soon as it becomes important for the public to know the exact relative value of two similar inventions, scientific experiments will be conducted by the nation to that end, and the results will be published in the catalogues in properly condensed form, the most valuable invention being clearly designated as such in accordance with the regular system of classification adopted.

Thus a glance at the catalogues or a visit to the nearest great sample-store, will suffice to give the architect at once, and with absolute accuracy, all the latest information on any subject he may wish to investigate, and the time required for selecting all that enters into the construction of the building becomes reduced to a hundredth part.

The determination of cost also now uselessly consumes a vast amount of the architect's time. He has, in fact, absolutely no means of correctly ascertaining this item even though it has a most important bearing upon his selection. The prices are indeed usually published in the catalogues of the dealers, but these published prices have no more to do with the selling prices to builders and other large buyers than the advertisements of a quack medicine have to do with its real value. The actual price is determined by the discount, and these the architect is rarely permitted to know. They not only vary from 5 to 95 per cent and more, but differ for different individuals, at different seasons, and are always subject to fluctuations without notice on the turn of the market or the caprice of an individual. All this insane tinkering with prices will instantly disappear under nationalism with the disappearance of its cause, and a fixed and just price will accompany every article in the great trade-catalogues of the nation.

What has been said of the architect applies also to the engineer, builder, broker, housekeeper, and, in short, to all who have purchases

to make. Under nationalism, housekeeper's shopping will cease altogether to be required, the national catalogues, telephone and rapid transmitting service rendering it superfluous.

For the sake of convenience and clearness, I will call the item of waste just described, the waste in "*purchasing*," as distinguished from the waste in "*selling*," before alluded to, and the amount of waste is, at least, as great on the part of the former as of the latter. For wherever there is a sale there must also be a purchase, and it takes exactly as long for a salesman to "stuff" (the only really appropriate word which occurs to me) a purchaser as it does the purchaser to be stuffed by the salesman. But since much more time is wasted in travelling to and from the place where the bargain is made, than in actually making the bargain, and as by far the greatest number of sales are made in the shops or warerooms of the sellers, the greater aggregate loss of time is suffered by the purchasers.

The seller has, moreover, to learn the qualities and prices only of his own goods, whereas the purchaser has to learn those of all the goods he purchases, and under the most conflicting representations which must evidently consume much more time.



WE come now to our third great waste which I call the waste of *contention*.

I estimate¹ that legal protection of all kinds costs each citizen on the average from one to four per cent of his income, which means from the standpoint of Nationalism, a waste of from one one-hundredth to one twenty-fifth, or an average of about one-fortieth, of all he produces.

Since ninety-nine one-hundredths of all litigation is the result of the competitive system of industry, we may add to the above, the loss as an unnecessary waste of energy, of substantially the whole working hours of all lawyers and their clerks and employés, claim-agents, sheriffs, judges and jury-men, army, navy and police forces, jailors, detectives, private watchmen, collectors, tax-assessors and insurance men. These aggregated in the year of the last census about one one-hundredth part of the whole working population. This hundredth added to the above-mentioned fortieth gives us over a thirtieth. To this again we may safely add another large percentage for the waste involved by the necessity of providing against mistakes and fraud, including all financial accounts, banking and bookkeeping, rendered almost entirely superfluous by Nationalism.

This item of the waste of *contention* has a peculiarly important bearing upon the architectural profession. It is truly said of the architect of the present day that he must be one-third lawyer and detective, and one-third business man. The preparation of his contracts, the search for defects in its fulfilments, and the settlement of disputes between his client and the contractors, occupy a very large part of his time, and require qualities of mind and training quite

¹ Deduced from Engel's Law. (See Ely's "*Political Economy*," page 281).

inconsistent with his legitimate duties as an artist and mechanic. Accordingly architects of the most sensitive and refined natures are placed at a disadvantage by these necessities, and the result is an almost inestimable loss to the public and to the art of architecture.

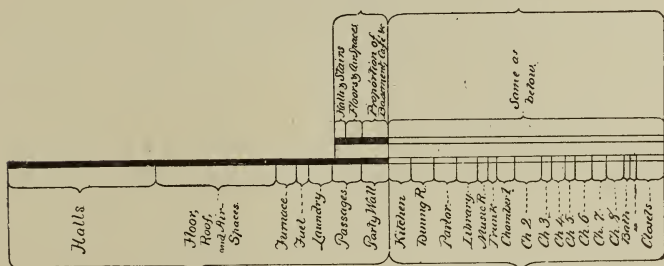
Under nationalism no such burden is laid upon the architect, the nation supplying him with all material and labor of absolutely uniform quality and cost, and his entire energies will then be turned with enthusiasm to the cultivation and practice of his art.

A fourth great loss is due to what I call "*exclusiveness*," and has reference particularly to our mode of living. We are *anti-social*, and owe this evil to the social and intellectual *inequalities* of the people resulting from the competitive system. I have shown in a previous article on "The Apartment-House," written for the *American Architect* in January, 1890, that our dwellings, built as is now customary in the United States in the form of isolated "towers," cost us from two to four times as much as equal accommodations would cost built in the form of "flats" in a properly constructed apartment-house. These figures are explained and verified by means of simple diagrams one of which I will here reproduce to make clear what follows.

In this diagram, the long black-and-white line represents an

"Flat" in Apartment House.

Unavailable Available.



Independent Dwelling

ordinary isolated city dwelling which we have called "tower," and the shorter the "flat" in apartment-house, which served for our illustration. The black part of each line denotes unavailable, and the white part available room, the sum of the two denoting the total cubical contents of each dwelling (by "available" I mean space which is directly occupied by the owner of a suite as distinguished from staircases, furnace, etc., which are simply used as means of rendering the occupied rooms habitable).

The white parts of the lines measure the same length in each case, because the amount of available room in both buildings is assumed at the outset to be the same. Thus in the "tower" the front and back staircases and halls take up 22,000 cubic feet out of a total 106,000 covered by the entire building. "In the 'flat' the proportional part of the halls and staircases for each suite is represented by a comparatively insignificant quantity as shown." The eighty families in

our illustration by uniting their eighty homes in one coöperative apartment, save 156 staircases, consisting of seventy-six front and eighty back staircases, seventy-eight furnaces, seventy-nine laundries, etc., and all the space they occupy, and the land, foundation and roof they represent. Again an enormous waste is shown in the flooring, roof and air-spaces of the "tower," while this item is but a trifle in the "flat." The six floors, each 16 inches thick, and the roofing, make up together in the "tower" 12,000 cubic feet, or nearly the equivalent of an entire story. Add to this 12,000 cubic feet of air-space under the roof and over the concrete, and we have in these items a waste of 24,000 cubic feet, against only 4,000 in the "flat." Thus we see that the waste space in the "tower" actually exceeds the available. Yet it must be paid for at the same rate with the latter. Deducting the waste in the "flat" from that in the "tower," we find the balance of waste space in the "tower" to be equal to the available, showing graphically that the "tower" must cost, in these items alone, just twice as much as the "flat."

The annual running expenses are also greatly in favor of the "flat" system when the advantages of coöperation are used to its greatest extent. Eighty independent Irish cooks give way to a professional chef and half-a-dozen attachés. The wages and maintenance of the 80 cooks would amount to an annual sum of not less than \$40,000; those of the chef and his assistants to hardly \$10,000, making in this one item a possible annual saving of \$30,000.

The management of the 80 independent Irish cooks, if possible at all, could only be accomplished by the constant struggle of 80 worried and largely inexperienced owners or their wives. The management of the chef and his attachés could more easily be managed by a single person.

Corresponding savings are evidently possible in every other department of housekeeping, including steam-heating, ventilating, laundry-work, lighting and elevator work. In all these particulars, coöperation, judiciously conducted, has been shown to produce surprising economies. In the matter of heating, for instance, besides the large saving in fuel due to handling the materials at wholesale, there is a vast saving in the amount of space to be heated. The "tower" contains 106,000 cubic feet to be heated. The same amount of available space in our "flat" contains about 50,000 cubic feet. Hence there is but half the space to heat, and, therefore, the cost of the fuel will be but one-half. In a like manner the cost of management is very much less, just as much less, in fact, as it costs less to manage one large heating-apparatus than to manage eighty small ones.

From an artistic standpoint, an immense advantage is seen. The rooms "may be grouped in the 'flat' in a manner which renders possible the highest architectural effect, whereas in the 'tower' the perpendicular arrangement evidently precludes such opportunity by limiting the design to a wearisome and monotonous repetition from basement to attic.

No argument can be sustained against the "flat" on the ground of transmission of sound or want of privacy and isolation, for sound may be as fully deadened as in the "tower" by means of improved deafening treatment now well-known to builders.

Isolation may be made complete in the 'flat,' the private halls

and front doors of each suite being in every respect the equivalent of those in the 'tower'; the only difference being that with the 'flat' the outer world begins with the public hall and its elevator, while with the 'tower' it begins with the public street and its horse-car.

Nationalism will bring us to the first true realization of the value of the society of our fellow-men. Universal education and cultivation under equal opportunities and equal material advantages will develop the highest qualities of mind, and the only true and perfect individuality. Men will become necessary to each other through their very differences of character, tastes and variety of intellectual attainments, and the selfish and narrowing isolation of the separate dwelling will give place to the coöperative apartment-house as surely as the isolated huts of the savage yield to the cities and villages of advancing civilization. Accordingly, under nationalism, the only valid objection to the apartment-house, namely, the uncongeniality of the people, will disappear, and with it half the expenses of living. In the United States to-day, over nine-tenths of the people live in isolated dwellings, and with ninety-nine one-hundredths the expenses are twice as great as they would be for better accommodation under the coöperative apartment-house system.

I am satisfied that it will be quite conservative to place the saving in this item also at, at least, a tenth of the entire present expenditure of the people.

Architecturally, the gain will be inestimable. Instead of the monotonous rows of inharmonious façades crowded closely together, largely to the exclusion of sunlight from their rooms, with their still more monotonous interiors, we shall have separate large and graceful edifices standing in open spaces wide enough apart to give ample chances for the air and sunlight to bathe every part. The streets will be laid out in such a manner as to enable all the rooms in the buildings to receive the sunlight at some part of the day, and each building will constitute a complete work of art in itself, set in an independent miniature park. So great is the economy of land-area obtained by this system of building, that ample space will be saved for verdure around each edifice, and there will be no crowded, insanitary, half-dilapidated fire-traps for "*the poor*" as now, constituting at once a disgrace to humanity and an eyesore and peril to the whole community.

The same principle of coöperative building will be practised in the country and at the seashore as in the cities, with the same end in view; namely, the promotion of social intercourse, preservation of natural beauties of site, and relief from household cares. The system admits of either detached or connected dormitories. The cooking, laundry-work, heating and other household drudgery of each community will then be done under a single management and with a single plant. By this system, the natural beauties of the landscape will be infinitely better preserved than at present. Now every one builds with little or no reference to the view and comfort of his neighbor, and the finest effects of scenery are destroyed. He does not even hesitate to imperil the health of his neighbor by the sinking of a cesspool or the laying of a carelessly-jointed drain close to his well, and I have known warm friendship between neighbors to be severed by the encroachment of the branches of an apple-tree belonging to one upon the premises of the other.

Under the new regime it will be for the interest of all to preserve all the beauties which nature affords, and the concentration of the residences of a special neighborhood on some one spot best adapted for building, besides giving to all the social and economical advantages which distinguish the civilized man from the savage, will ensure to each the most perfect enjoyment of the bounties of nature.

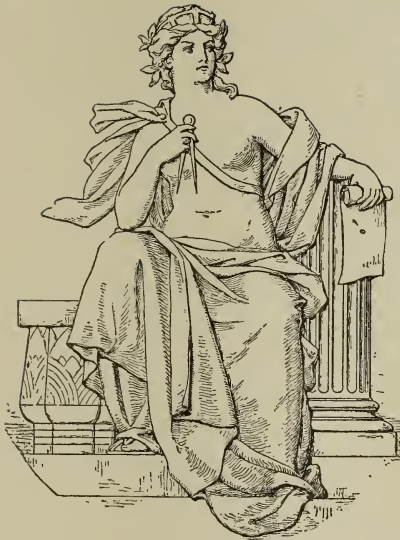
Nor does this necessarily preclude the possibility of an occasional entirely isolated and independent cottage for those exceptional natures who, for any reason, will prefer seclusion. It is only requisite that such isolation be attained without injury to the rights and privileges, as these will be under nationalism for the first time fully understood, of the rest.

There will, however, be no such shocking difference in the twentieth century in the aspect of the city and that of the country as now.

Remove from the city to the more suitable localities the crowded shops and grimy factories, and substitute for them parks and fountains; remove the insane clamor of traffic consequent upon our present system of industrial warfare, and the populous city will rival the rural village in natural beauty and repose. The various manufacturing and agricultural industries will be concentrated in those parts of the country best fitted by nature and climate for their conduct, instead of being divided up and planted anywhere, haphazard at prodigious waste in power and transportation. Animal power, as a motor for transporting freight is already being rapidly supplanted by electric-motors, and in the twentieth century animals will be debarred from the streets, which will then be everywhere smoothly paved with asphaltum or flagging, and maintained as clean and even as a hall floor. As a consequence of this, one of the greatest evils of city life, greatest, whether considered from a sanitary or from an artistic and economical standpoint, *dust*, the distributor of disease germs, and the perpetual torment of the housekeeper, will be substantially banished from the city forever.

The coast line of picturesque seaport cities like Boston, instead of being brutally sacrificed as now to lumbering warehouses, will be transformed, as a matter of course, into esplanades of marvellous beauty after the general plan of the Lake Fronts of Chicago; the mercantile vessels and shipping wharves being transferred to the new points determined by the requirements of the great manufacturing and agricultural centres, leaving pleasure yachts and cultivated ocean terraces to take their places in front of the residences.

Of course, no one imagines that such a transformation could take place all at once. But as the nation assumes, in continuation of the evolutionary process long since begun, the management of the various industries one by one, acquiring next, perhaps, the railroads, telegraphs and mines, and gradually extending its control as fast as the public good demands, so, one after another, the private business structures which cumber our streets will disappear, and the new city will rise in their places. The sooner the public becomes aware of the great advantages which this new order will bring them individually and collectively, the more rapid will be this transformation and the fewer will be the sufferings which would come to all through leaving the process to the slow course of natural evolution.



Architecture.

OUR next great item of waste comes from the failure of society to utilize the highest capabilities of women. Drudgery, which the nation should perform now falls upon her, and excludes occupations which would not only be more congenial, but which are absolutely indispensable for the highest development of society. In the year of the last census, out of the seventeen million of persons employed in all occupations, only two and a half millions were women. One of the leading principles of nationalism is that every individual shall be provided with the occupation for which he is best fitted, knowing that the greatest curse for the individual as well as for

society is to be condemned to an existence of idleness, and that the greatest blessing is to have a congenial occupation, relieved by suitable seasons of rest and recreation. Moreover it recognizes that the work of men and women are distinct from, and supplementary to each other, and that the work of each is equally necessary for the perfect health of the social state. Accordingly special occupations, scientifically adapted to their respective physical and mental natures, will be provided by the nation for each. No such absurdity as a question of women's right to suffrage will exist under nationalism. Her participation in the regulation of all matters affecting her own sex, or equally both sexes, will be needed by the nation, and being needed will be exacted of her. It is evident that the home and family will always claim a part of every woman's time, but the energy which is now unnecessarily spent in shopping and household drudgery, including that part of the training of children which can better be performed by scientifically trained instructors, as well as all the time which is now wasted in unprofitable idleness and luxury will be claimed by the nation. We may, I think, fairly put the nation's share at, on the average, one-half the

working hours of every woman. But again, to avoid all possibility of over-estimating our items of waste, and to leave ample margin for differences of opinion in this matter, I will reduce the figure to *one-quarter*, particularly as it is a fact that a large part of the home work of women in wealth production escapes census enumerations. Taking then a quarter of the time of the fourteen and a half millions of women now unemployed, in the sense above indicated, according to the census of 1880, we have the equivalent of three and a half millions available for the full working time, or about one-fifth of the entire working population of to-day.

Accordingly, our waste due to this item of the *unprofitable employment of women* amounts to a fifth of the whole productive energy now exerted.

It is difficult to estimate the loss to the art of architecture due to the exclusion of the female element from its actual practice, particularly under the favorable conditions induced by nationalism; but it is fair to say that at least half and probably much more than half of the inspiration which might have contributed lustre to our fair and noble art—ever symbolized by the female figure—have by this exclusion been sadly thrown away.

The next great unnecessary waste comes from the *labor troubles*, due to the evils of the competitive system and involving failures, business crises, gluts, strikes and lock-outs, speculation, speculation and gambling, and all the timidity and hesitation resulting from these evils.

Richard T. Ely says in his "*Political Economy*," page 260: "It appears that wage-earners are idle about a tenth of the working days in the year, on an average"; and it is a common saying, well supported by the facts, that for every success in business there are two or three failures.

Each must learn anew for himself by bitter experience and long struggle the secret of financial success. Each must create an independent policy, and work out a system of management alone and unaided, and very few succeed in this before their youth and power of enjoyment have passed away.

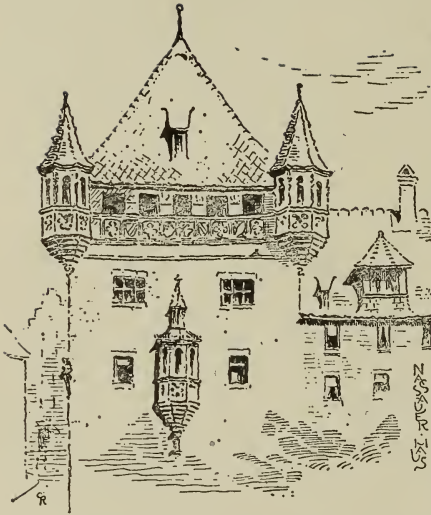
Each zealously keeps the secret of his success to himself, for to share it with a competitor would be financial suicide. The terrible nervous strain occasioned by this incessant warfare on the part of our business men, embitters their whole career, and deprives success of whatever sweetness mere money-making possesses. The struggle becomes more severe each year, and the ratio of insanity increases much faster than that of the population.

A short time ago a successful business man, of world-wide reputation, on being congratulated upon his unusual success remarked, "I would rather have my head cut off with an axe than endure the worries and responsibilities of my business life again. It ended by driving me into nervous prostration of long duration, barely sparing my life." If such is the experience of an "eminently successful" man, what must be the life of the vast majority, who are eminently unsuccessful?

The loss of effective working power due to this great nervous strain forms an important element in the item of waste now under consideration.

Deducting now from the seventeen million workers those who have already been considered under our previous heads of *distribution* and *contention*, and also the professional men, we have a balance of about thirteen millions who must be included under the present class of wage-earners and business men.

We estimate that considerably over a tenth part of the time of these thirteen million workers is wasted in what we term *labor troubles*. This is equivalent to a loss of more than a thirteenth part of the energy of the whole body of workers. It is only necessary to add a thirtieth to more than make up our tenth on this item, and the want is quickly supplied by the timidity of capital and labor resulting from the great perils and hardships connected with all business undertakings and the mental and physical exhaustion which these evils produce.



OUR next great waste comes under the heading of preventable *crime and disease*.

The census of 1880 places the number of defective, dependent and delinquent classes in the United States at 409,535, (including 168,854 insane and idiotic, 82,806 blind, deaf and dumb, and 157,875 prisoners and paupers). This makes, including their attendants and keepers, nearly half a million persons withdrawn from useful occupations, or about a thirty-fourth of the whole working population.

It is impossible to estimate how large a proportion of insanity and idiocy is due to the distress, poverty, and fearful nervous strain resulting directly or indirectly from the present system of industrial warfare. Perhaps nearly all; but I will place it at three-quarters, which may be taken as the lowest measure of the benefits of Nationalism in this respect. Ninety-nine per cent of the prisoners and paupers would be liberated by Nationalism, since ninety-nine per cent of the causes for both will disappear.

Add to the above wastes the losses due to intemperance and prostitution, both of which are directly traceable to the evils of the competitive system; and the losses coming from the preventable diseases, and from the competitive manufacture and sale of intoxicants, quack medicines, opium and other hurtful drugs, and we shall obtain a sufficient aggregate to raise our percentage of waste under this heading far above the tenth we have allowed for it.

Our margin of safety is here sufficiently large to cover that part of the waste enumerated which Nationalism alone might be powerless to cure.

The annual production and sale of drinks amount, according to the estimates of Mr. Atkinson, to \$400,000,000 or a twenty-fifth of the whole national income.

Now under Nationalism, the manufacture and sale of all liquors being under the government, and no profit to individuals being obtained therefrom, and all incentives to drink coming from poverty or distress and idle luxury being removed, and the strong public sentiment coming from universal education being turned against drunkenness, the cause for this great waste will substantially disappear.

A ninth great waste comes under the heading of *unfitting occupations*. A man can do twice as much work in the direction for which he is fitted as in any other. Yet in nine cases out of ten the choice of calling is regulated by other things than special aptitude. Fortune, favor and fashion are the governing factors.

Money considerations debar countless numbers from following un-lucrative callings for which they have decided fondness. Family interest or personal favor opens opportunities to some to the exclusion of others who are better fitted or more justly entitled to occupy them. Fashion and social restrictions frequently exclude the college graduate from the only field in which he possesses a strong natural aptitude. Finally, with women, the restrictions are so great that only a seventh part of the whole possible number are reported by the census as employed at all.

The whole great mass of the laboring and poorer classes, deprived of the advantages of a liberal education, are practically excluded from all occupations in which education is an essential element, and countless talents are thus buried in obscurity and lost to the world. They are even deprived of a free choice in the realm of manual work, inasmuch as the fluctuations of supply and demand necessarily limit freedom in this respect under the competitive system and render any continuous employment in a given field extremely uncertain.

A prolonged "glut," so-called, in the market in any particular industry, or a decrease in the employing capacity of any individual or combination of individuals, involves the suspension of the work of many "hands" and their absorption into other lines after a great waste of energy has been sustained in making the change.

All this would be changed under nationalism. For it is a necessary consequence of the system, and one of its most important characteristics, that every citizen will be employed by the nation in the line for which he is best fitted, and every possible effort and precaution will be taken, to ascertain correctly in each case, what this line may be. For it will be for the interest of all, that each shall contribute his utmost for the commonwealth, and in no other way can such a result be attained. Under the competitive system, on the contrary, every one considers it for his interest to reduce the productiveness of his competitor, inasmuch as his neighbor's failure contributes directly to his own financial success.

Accordingly under nationalism the standard of work of all kinds will be raised to the highest possible point, there being no incompetent ones, quacks, or humbugs to lower it. Industry and ability will be the only sure road to honor, and the most important

commissions will be confided by general consent to those best fitted to execute them. Since every one will be directly benefited by such selections, the bitter feelings of rivalry and jealousy now existing will disappear, and a spirited but friendly emulation will take its place.

Nationalism would at once put an end to the use of our absurd weights and measures and replace them by the Metric System now adopted by the majority of civilized nations. "Private enterprise" has thrown the only practical obstacle in the way of its introduction during the last decade. For nearly a quarter of a century the Government has shown a disposition to meet the people more than half-way in joining the general march of progress among nations in this particular, and almost the only positive opposition has come from private owners of machinery and goods whose gauges and values would be affected by the change.

Thus the interests of the whole people have been sacrificed for the benefit of a few selfish and short-sighted, but influential individuals who have so far succeeded in working upon the ignorance and prejudice of the masses, and through them postponing the adoption of a blessing, the importance of which can hardly be estimated. The United States Government has always had a decimal coinage which is now also metric. Our five cent nickel weighs 5 grams; our dime $2\frac{1}{2}$ grams; our twenty-five cent piece $6\frac{1}{4}$ grams; and our fifty cent piece $12\frac{1}{2}$ grams. Our Congress made the Metric System legal in 1866, and caused each State to be furnished with a set of the metric standards. And since then the metric system has been used exclusively in all the work done in the Assay Department of the United States Mint, in the United States Marine-Hospital Service, and the metre has always been used in the United States Coast Survey. Under nationalism, when all machinery and industries are owned by the nation, it is evident that no other than the metric system can possibly be used, because the simultaneous employment of two or more different systems will then be seen to be an absurdity and absolutely useless and inexcusable.

The metric system may be fully mastered in a few hours by any person of ordinary intelligence, whereas, on the contrary, no man exists who can master in a life-time, all the intricacies of the mutual relations of the weights and measures of our present tables.

It has been estimated by good authorities that the introduction of the metric system will save between one and two years in the school-time of every child enjoying a liberal education. In after life in all practical business and scientific research, the saving of time and money will be inestimable.

Especially important will this item be to the architect and engineer with whom the calculations of weights, measures and values of building materials form, or should form, an important part of their work, and they have accordingly for many years actively favored the adoption of the metric system, and in 1886, the Western Association of Architects voted to petition Congress to pass a law making the system compulsory after a reasonable period.

Foundations are measured in rods or perches of two or three different kinds, and other building materials in yards, feet and inches, or by weight in tons, hundred-weights, pounds and ounces of

several different kinds, none having any scientific relations to each other, and computation which in the metric system may be accurately made with a few dozen figures often require as many hundred in our ordinary measures with only an approximation at accuracy.

I have before me the figures required by an architect to estimate approximately the weight of a quantity of material used in building. The operation required 380 figures. I solved the same problem with absolute accuracy by the aid of the metric system in 68 figures, and in doing so found that the inaccuracies of the first result were practically unavoidable.



Belfry.
Bruges

WE have calculated the losses of energy sustained in selling and purchasing under the competitive system; in needless contention; neglect to utilize the capabilities of women; in the extravagance of our exclusiveness; in incessant labor troubles; in all kinds of preventable diseases and crime, and in the unwise allotment of the work to be performed.

But a far greater loss than any of these comes from the *anarchy of production*. "These points of which I have been speaking," says Mr. Bellamy, "indicate only negatively the advantages of the national organization of industry by showing certain fatal defects and prodigious imbecilities of the system of private enterprise which are not found in it. These alone, you must admit, would pretty well explain why the nation is so much richer than in your day. But the larger half of our advantage over you, the positive side of it, I have yet barely

spoken of. Supposing the system of private enterprise in industry were without any of the great leaks I have mentioned; that there were no waste on account of misdirected effort growing out of mistakes as to the demand, and inability to command a general view of the industrial field. Suppose, also, there were no neutralizing and duplicating of effort from competition. Suppose, also, there were no waste from business panics and crises through bankruptcy and long interruptions of industry, and also none from the idleness of capital and labor. Supposing these evils, which are essential to the conduct of industry by capital in private hands, could all be miraculously prevented, and the system yet retained; even then the superiority of the results attained by the modern industrial system of national control would remain overwhelming.

"You used to have some pretty large textile manufacturing establishments, even in your day, although not comparable with ours. No doubt you have visited these great mills in your time, covering acres of ground, employing thousands of hands, and combining under one roof, under one control, the hundred distinct processes between, say, the cotton bale, and the bale of glossy calicoes. You have admired the vast economy of labor as of mechanical force resulting from the perfect interworking with the rest, of every wheel and every hand. No doubt you have reflected how much less the same force of workers employed in that factory would accomplish, if they

were scattered, each man working independently. Would you think it an exaggeration to say that the utmost product of those workers, working thus apart, however amicable their relations might be, was increased not merely by a percentage, but manifold, when their efforts were organized under one control? Well now, Mr. West, the organization of the industry of the nation under a single control, so that all its processes interlock, has multiplied the total product over the utmost that could be done under the former system, even leaving out of account the four great wastes mentioned, in the same proportion that the product of those mill-workers was increased by coöperation. The effectiveness of the working force of a nation, under the myriad-headed leadership of private capital, even if the leaders were not mutual enemies, as compared with that which it attains under a single head, may be likened to the military efficiency of a mob, or a horde of barbarians with a thousand petty chiefs, as compared with that of a disciplined army under one general — such a fighting machine, for example, as the German army in the time of Von Moltke.”

According to the tenth census the number of persons engaged in manufacturing, mechanical, mining and agricultural industries, that is in wealth production, amounts to eleven and one-half millions, or two-thirds of the entire working force, and more than five times the number employed in distribution. All these “hands” and “heads” are working at cross-purposes and in the dark. Each head has to learn independently how to organize and lead its little squad of hands in its own imperfect way, where a single head and a single business system might be organized once and for all, and serve for the entire eleven and a half million. Each hand is needlessly duplicating work for the thousandth time in guiding one of a thousand small machines which could far better be supplanted by a single great machine. Each small factory or firm has its separate officers, superintendents and foremen, where thousands might be united in a single establishment under a single system of superintendence. Each part of the country is sending its raw materials to a thousand different places for conversion into marketable goods only to be returned again for consumption, where all this cross transportation might be dispensed with.

Eliminate this last and greatest waste, and the annual wealth production of the country might, as Mr. Bellamy truly says, be increased not merely by a percentage but many fold, even without taking into account at all the nine other great items previously considered.

There are many other great wastes directly due to the competitive system of industry which will occur to the reader; such as the loss of energy, due to the manufacture and use of adulterations of all kinds, which has now assumed colossal proportions, and the loss due to the obstruction of free trade with other nations, occasioned by the present policy of “*Protection*” which will instantly be viewed in a new light when the nation assumes itself the conduct of all industries.

It is said that in Paris alone, two thousand children die annually before reaching the end of their second year of tuberculous disease contracted through cows’ milk. Rich and poor alike are exposed to

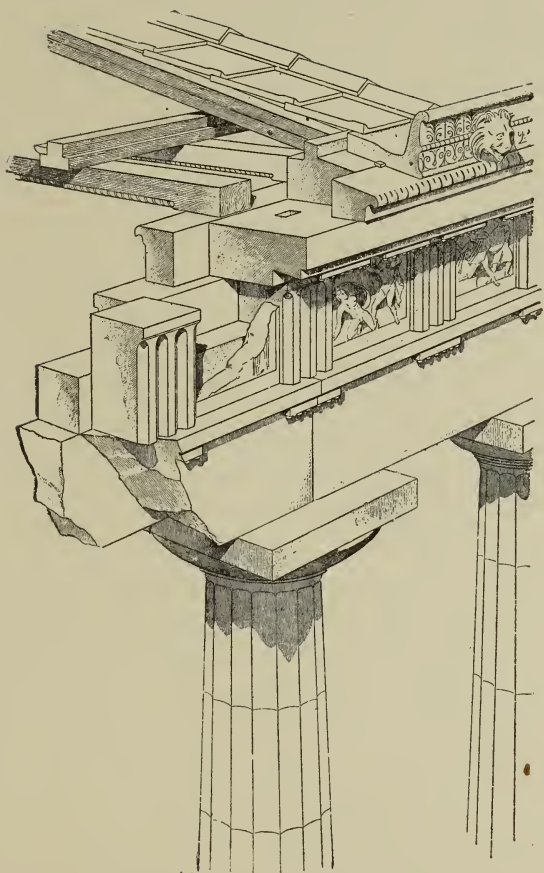
the terrible danger due to the sale of infected milk and unwholesome food of all kinds, an inevitable result of the existing industrial system.

Nationalism, by eradicating the incentive for the sale of such food, will thereby stamp out a vast amount of the disease which now afflicts the whole community, and will correspondingly increase its power of wealth production.

Accordingly I believe it would be nearer the truth to say that the nation will be nearer twentyfold than tenfold richer when all these gigantic wastes together are abolished, when the people come to a general realization of the gigantic folly of the competitive system of industry.

Thus it is easy to see that the principles of Nationalism involve no confiscation of property now owned by private parties. Land and machinery required by the nation can then be obtained, as now, in the open market, and under more equitable terms, since justice and morality form the distinguishing characteristics of Nationalism, and Government Bonds will be eagerly taken in exchange for private securities.

What will be the effect upon the architecture of our country, of this universal enjoyment of wealth and cultivation, this immeasurably improved condition of the whole people under Nationalism? It will develop a national style of architecture which will surpass in splendor anything hitherto known in the history of the art, even as the superior social state of the ancient Greek Republic produced, in the midst of an age of comparative barbarism, the art of Phidias.



Part of a Greek Temple. From Viollet-le-Duc's "*Discourses on Architecture*."

WHAT are the special conditions—the social and intellectual peculiarities—which developed the great styles of architecture, and to what extent will nationalism reproduce these conditions and characteristics?

Beginning with the art of ancient Greece, we find a republic in which all the citizens participated in public affairs and took a deep interest in them as members of the same society. This spirit of association and equal political and social power and responsibility encouraged a spirit of criticism, emulation, ambition and intellectual progress. All the citizens were cultivated art critics and more or less of philosophers. The architect both valued and feared their judgment on his work, and exerted himself correspondingly to render his creations worthy of himself and his country. Every part shows the result of careful reasoning in virtue of which the design was precisely suited to the requirements of the structure and to the nature of the materials obtainable. The Athenians were slaveholders, but the slaves formed no part of the Republic proper, and corresponded simply to our machinery. They did the work of machines, giving the Greek citizens the opportunity for performing the higher intellectual work. Sparta alone of all the Greek cities developed an exclusive and inhospitable aristocracy, and never cultivated the arts.

With the Athenians the artist worked, not for a chief, nor for an aristocracy, nor a plutocracy, but for the whole people who were free, cultivated, fastidious, critical and disputatious. "If such a task is difficult, the recompense is precious when obtained; for success, won from such a public opinion, is the only reward which can really flatter the artist . . . The Athenians were inclined to make art rule over all things, or rather to convert everything into a work of art. Among them an event, a fact, a phenomenon, good, evil, all that exists in the material or immaterial world, was translated into this language, with a delicacy of observation, a logical truthfulness, a simplicity and energy of expression which seems almost superhuman. But faculties so precious could only be developed in the midst of a perfectly homogeneous society, all of whose members, moved by the same intelligence, understood each other and were equally sensitive to the different expressions of art."¹

Precisely these conditions will be reproduced under Nationalism. The great wealth of the Nation will give every citizen something of the leisure so fruitfully applied by the ancient Greeks to the study of art. With short working days of perhaps from four to six hours, and frequent and liberal vacations absolutely free from business cares, ample opportunity will be given for physical and intellectual development. Relieved from the all-absorbing occupation of money-making and money-losing, with its long train of consequent evils, and equipped with the complete education received in early life consisting partly of manual and partly of mental training (the one or the other predominating in accordance with the natural aptitude of the individual), all the useless pursuits, legal, military and criminal, necessitated by the competitive system, being abolished, the entire energy of the whole people will be directed to the cultivation of the arts and sciences including manufacture, agriculture and transportation.

All the desirable features of the Greek Republic at the time of Pericles will be reproduced and magnified.

The first feature of vital importance, after that of the general cul-

¹ Viollet-le-Duc's "*Discourses on Architecture.*"

tivation of the masses and social equality, influencing Greek architecture, was that the architect was both artist and engineer; or, in other words, the professions of the architect and engineer were one and the same. This is an essential condition, and the impossibility of its realization under the present form of competitive industry, is one of several reasons why we cannot expect to see the development of another great style of architecture so long as this system lasts. It is not sufficient that the architect should employ an engineer or associate himself with one. He must *be* one. Already far too much is exacted of the architect to-day to enable him greatly to extend his sphere in this direction. He must first be relieved of two-thirds of the cares and responsibilities he now sustains, and this can only be done, as already indicated, by the Nation.

The result of the union of these two qualities in the architect is most forcibly shown in the magnificence and boldness of the early Gothic architecture, but it is also clearly evident in the logical refinement of the ancient Greek; while its absence is the cause of the failure from an artistic standpoint of the Roman architecture.

These facts are too well recognized to-day by the architect to require argument, but for the non-professional reader a few illustrations may be necessary, and even to the professional useful, as presenting the subject in a new light.

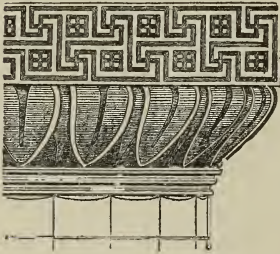
The initial cut shows the construction of part of a Greek temple.

The simple problem before the architect was to build an enclosed room surrounded with porticos to protect and shade it, in the most suitable and beautiful manner with the materials and machinery at command. His material consisted in the marbles of the neighboring mountains; his machinery in the arms of his slaves. Accordingly, where large blocks of material are not absolutely necessary for grandeur of effect, as in the walls of the cella, small stones are used, which can easily be transported in square blocks by these slaves. Where large pieces are required, as in the columns of the porticos, the blocks are cut at the quarry in the cylindrical form necessary to facilitate transportation by rolling. The lintel stones above the columns are smaller and composed of two long pieces, one showing a face on the exterior, and the other on the interior of the portico. This division is for two purposes, both considerations of engineering, the first being to diminish weight in transportation, and the second to avoid danger of fracture under the pressure of the superstructure on account of chance flaws or natural lines of breakage, invisible at the time of quarrying, to which all calcareous stones are liable. We see everywhere the science and skill of the engineer united with the delicate feeling of the artist. The lintels are raised to their places by ingeniously formed channels cut in their ends, since the modern crowbar and wedges cannot be used to adjust these finely cut and finished blocks. The capitals of the columns are formed with strong projections all round, the lateral projections being needed to assist in the support of the lintels, either actually or for the satisfaction of the eye, and the front and rear to serve as scaffolding for the erection of the lintels and superstructure. Above the lintels only small stones are used, since large ones are not needed for the artistic effect of the structure. The corner columns where greater strength is needed are spaced

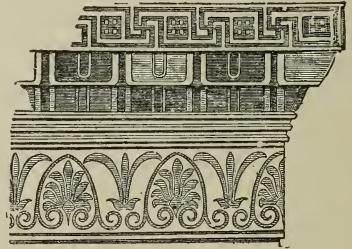
nearer together than the rest, and these columns are slightly thicker than the interior ones and lean slightly inward to increase the stability of the building. The strength and proportions of every part are calculated with the utmost refinement.

The same constructive skill is displayed in the treatment of every detail, and the same hand and mind are apparent in their artistic decoration. Thus the columns and triglyphs are fluted to increase the effect of vertical strength, and give decision and character to the lines of light. The columns are diminished in size toward the top to correct the optical effect of the reverse which an equal diameter at the top would produce; and all the apparently straight lines of the building, both horizontal and vertical, are really most delicate hyperbolic curves designed with the most subtle feeling to counteract optical effects produced by their combinations which would offend the trained eye of the Greek.

Every moulding has its meaning, explanatory of the functions of the member it adorns, and every piece of sculpture tells a story appropriate to the purpose of the structure. Thus the moulding under the abacus of the Doric column indicates by its design the massive weight these sturdy members support. The story is told by the form of the leafage inscribed upon its surface. The leaves are doubled entirely over upon themselves until their pointed ends touch their bases, as shown in the accompanying sketches. The leaves on the antæ or pilasters are somewhat less bent indicating thereby truthfully that less weight is borne by them than by the columns. With the Corinthian order, on the contrary, where, as compared with the Doric, grace and lightness are the distinguishing features, the leaves below the abacus are but lightly curved, and thus express the comparative lightness of the entablature. The Romans, incapable of



Doric Column Capital.



Doric Pilaster Capital.

understanding any such refinement of art expression as this interpreted the Doric tracery above described as indicating eggs-and-darts, and so named it. Could any more unfortunate symbols possibly be devised to express resistance to colossal weight than eggs-and-arrows!

Finally, the whole structure is richly decorated with strong, pure colors, for the purpose of setting forth the various members of the structure in bold relief and of adding brilliancy to the design. "This application of color," says Viollet-le-Duc, "to the exterior of monuments is so necessary in a country like Greece, where the air has a marvellous transparency, that to-day, for example, he who

from a certain distance looks at the Temple of Theseus at Athens, now deprived of its colors, when in full sunlight, finds it impossible to distinguish the lights on the columns from those on the wall of the cella behind them, these lights, though on different planes, being confounded and appearing to be projected on the same surface."

When the travelling public view the ruins of these temples to-day, they see nothing of their real beauty, the color, the sculpture and refinement of the forms are gone; yet the average traveller imagines himself transported with admiration when he beholds them, and he describes their glory to his friends at home with as much enthusiasm as if he had actually seen the reality. Thereupon ghostly imitations are erected all over the country, without the color, sculpture, refinement, life or meaning of the original creations, and our public has not the cultivation to realize the absurdity of the thing. They are, in fact, as a whole, too much hurried and worried to care anything about the refinements of the art of architecture, and could not afford to pay for them if they did.

The next desideratum for the development of a true style of architecture, evidently unattainable under our present competitive system, is that the architect should be permitted in every case to personally superintend the execution of his design; in order that the architectural forms may exactly conform to the conditions of the site. "It is not rare," says Viollet-le-Duc, "to meet persons, considered competent judges, or even artists, who believe that a project conceived by an architect can, without losing any of its merit, be put into execution by outside subalterns without any direct supervision of the architect. Now a work of architecture, like every other work of art, is the most intimate association and agreement between the conception of it, and the manner and means of executing it; and to suppose that an architect can make a design, which another can execute without his superintendence, is the same as admitting that a musician may be two men, one who composes and one who arranges the score of the orchestra. The skilful architect, in designing, always has in view the materials he is to employ, their forms and dimensions; he must appreciate their qualities and nature, and dispose of them accordingly; he builds up in one day in his mind what it will take years to erect actually; and the sheet of paper before him already becomes, as it were, a vast constructor's yard, where masons, stone-cutters, carpenters, iron-workers, slaters, joiners, glaziers, sculptors and painters, are plying their vocations to produce an harmonious whole, just as the musician, in composing an opera, hears the various instruments of the orchestra, the choruses and the voices of the singers. But in order that the public may recognize in the score of the musician as in the monument of the architect, an original work of art, bearing the impress of personal talent, the musician must have himself written and arranged all parts of his composition, as the architect must have himself apportioned among all his workmen the various details which compose his monument; and it is essential that the musician himself should direct the rehearsals, so that he may modify his work where experiment may render it necessary, as the architect should superintend his mechanics and arrange, according to the spirit of his design, the innumerable unforeseen emergencies of execution as they daily arise

under the hands of the workmen." The direction and power of the sun's rays, and the forms of the shadow in particular localities always determined the forms of the mouldings used in the Classic styles. The architect should not only supervise the erection of the building, but to a certain extent also, the preparation of the materials, since his design must be influenced by the size, form and constitution of the materials he uses. If, for instance, his stonework must come from quarries which are capable of furnishing only small blocks, the design must be governed by this condition. If, on the other hand, enormous blocks are obtainable, the design must be made to take advantage of this as an element of grandeur. It was in strictly conforming to these principles that the Greeks and mediæval architects produced the essential characteristics of their styles.

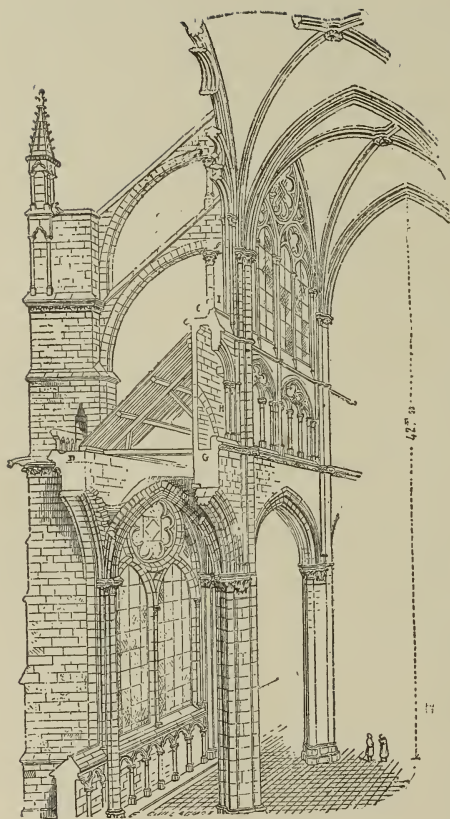
It is not so with us, nor can it be in the pressure and hurry of the modern architect's work. Our design must be made to suit the style arbitrarily selected, and be prepared in time to enable the building to be completed in accordance with the close financial calculations of the owner, and if the stones come from the quarry in pieces too large to conform to the design, they must be cut up into little pieces or else grooved in courses shamming little pieces as the only alternative.

Mr. Henry Van Brunt, in the introduction to his scholarly translation of Viollet-le-Duc's "*Discourses*,"¹ refers to this evil in the following telling words: "The atmosphere of haste in which we live is another element distinctly detrimental to the development of good style. But the Greek democracy, says our author, 'had the inestimable advantage of leisure.' The Greek temple, therefore, is an expression of utter tranquility. The very essence of that great art was deliberation. The architect was never hurried; his inspiration proceeded, not from impulse, but from conviction. He built slowly. But with us he is pressed to the completion of his work amidst bustle and confusion. The public is impatient of delay; it must have promptness and despatch at all hazards. The modern Ictinus must supply the design for the new Parthenon, 'ready for estimates,' in three weeks at farthest; and the unfinished study is perpetuated in a workmanlike manner and with all its sins of omission and commission made permanent and monumental. Indeed, all the conditions of life in this country encourage the architect to habits rather of rapid composition than of study and reflection, and tend to make of his occupation rather a business than a fine art. The 'strenuous liberty' which we have inherited involves a constant and often harassing struggle for existence. Therefore, the aim of the architect is to multiply his opportunities of professional work to the utmost extent, having in view, first, his pecuniary emoluments, of course, and second, his art. Under these circumstances he has no time to review his studies; he cannot afford, after his first sketches are made and his work is in progress of routine development in his office, to distrust and chasten his favorite *motifs*, with the solicitude and patience of an artist aiming at perfection like the Greek; much less, having discovered on reflection a new condition in his problem which would enable him perhaps to raise to a higher plane of artistic excellence or fitness the whole sentiment of his work, to throw aside

¹ Published by Ticknor & Company, Boston.

his old studies and begin anew. This costs too much. If the products of routine and conventionality will satisfy his impatient public, he has the strongest impulse under the circumstances to content himself with the superficial appearance, and let the substances of art go for those who can afford it. Art is a mistress who is won by no such partial service."

Now so long as "time is money," and the struggle for money is the first aim and only condition of existence with the people, or in other words, so long as the competitive system exists, so long will that mistress refuse to be won by them.



Section of the Nave of Amiens Cathedral. From Viollet-le-Duc.

THE union of artist and engineer is particularly noticeable in the architects of the twelfth century. Their great cathedrals are marvels of engineering skill handled with consummate art. The problem before them was almost the reverse of that presented to the ancient Greek. A vast hall must be built and roofed-in with materials so small as to resemble rubble more than blocks of masonry. The supports of the roof vaulting must occupy a minimum of ground area, not only for the purpose of giving the greatest possible amount of unobstructed room for the performance and view of the sacred ceremonies and grand processions held within them, but also to provide a maximum of open space for the gorgeous stained-glass windows which form a leading characteristic of the Gothic style. The initial-cut shows the construction of a part of a Gothic cathedral.

Only a perfect mastery of the laws of statics and dynamics, as affecting the materials employed and a marvellous skill in their application, enabled the architect to erect such daring structures, which have already stood the test of five centuries and now seem capable of standing as many more. The Gothic represents the dynamics and the ancient Greek the statics of architectural construction, and the resultant forms are correspondingly diametrically opposite to-

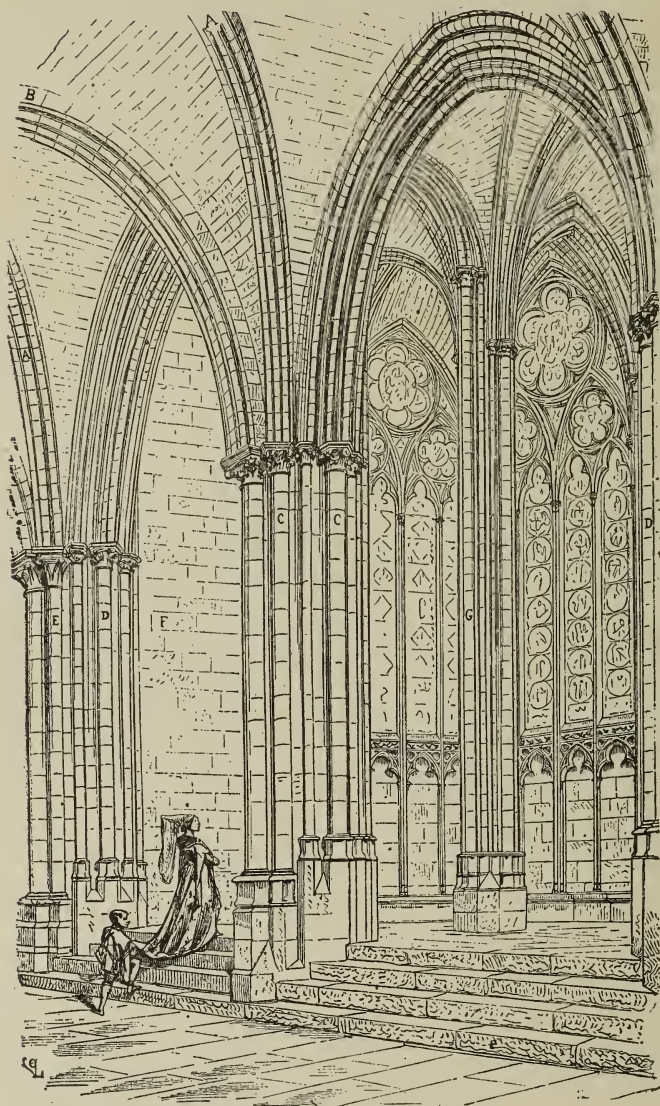
each other. Equilibrium, the opposition of compressible to tensile forces, and the reduction of the horizontal section of the points of support to a minimum are the principles of Gothic construction. Iron, had it been obtainable in large masses for building, would have been enthusiastically used by the Gothic architects as a means of obtaining points of support still more rigid and condensed.

The Gothic architecture did not attain its highest perfection until emancipated entirely from the control of the church. This took place at the end of the twelfth century, when a real national spirit began to make itself felt in the gradual enfranchisement of the commons, in scholastic discussions and in the study of ancient philosophy. Then throughout France a truly national style arose with a general thirst for knowledge, independence and national union among all the people of the middle classes, and under this influence it developed with great rapidity. The artists were then entirely independent, neither the clergy nor the nobility interfering. The whole people took an intense interest in their architecture. They were not, in the modern sense, highly educated. Books were rare, since the printing-press did not then exist. Therefore, the painting and sculpture of their cathedrals formed almost their only literature, and this made these buildings all and all to those who erected, as well as to those who worshipped in them, and thus the appreciation and love for art grew strong among the whole people and was not confined to the richer classes.

The accompanying cut represents in perspective a part of the interior of the Cathedral of Mayence, and gives some idea of the marvellous beauty of these noble creations, the highest work of art ever produced by man. Such interiors as these, blazing with harmonious colors and rich with sculpture, could only be the work of love of a whole community inspired by one feeling and a universal sympathy for their national art, and could have no other effect upon those who worshipped in them than to civilize and elevate them to a still higher degree. This cut illustrates clearly the method of construction of mediæval architects. Not a stone over a foot thick is shown in the whole design, and yet the stability both actual and apparent of the structure is absolute, even though the horizontal area of the supporting columns is reduced to the smallest amount possible with stone, and the walls are cut away to mere points of support in order to make room for whole volumes of history in stained glass.

"An epoch," says Viollet-le-Duc, "which regards art as a mere matter of luxury, an appurtenance of the privileged classes, or an envelope proper only for certain public monuments, may be a well administered epoch, but it does not possess the highest element of civilization, and perhaps one of the most essential qualities of public tranquillity. There are intellectual enjoyments, as well as material enjoyments, and the former, like the latter, when they become exclusive and privileged, create envy and ill feeling. If but a few know how to read, the ignorant crowd, when it chances to get the upper hand, burns books with as much passion as it burns sumptuous châteaux, where all the material pleasures of life are brought together. If everybody can read, books will accumulate and remain uninsulted upon the library shelves. In the same manner to make

art a matter of luxury or to associate it only with wealth is danger



Interior of Gothic Cathedral. From Viollet-le-Duc.

ous alike for art and for the exclusive few who patronize it. It is

important, therefore, to render art catholic, and to restore it to its proper influence over all things and its proper place everywhere; it is important that the minds of all, and of artists more especially, should be penetrated with the truth that art, in architecture, does not consist in the employment of precious marbles or in the accumulation of ornaments, but in distinction of form, in the most graceful and most honest way of doing practical things; for it costs no more in money, although it may in thought, to cut stones or to lay bricks according to judicious principles, and with a proper regard for æsthetic proprieties, than to cut and lay them without duly considering the place they are to occupy in the building, and the part they are to bear in its general effect. Now the art of the lay school in the thirteenth century was essentially democratic; it was everywhere and in everything; and the villager had as much right to be proud of his little church, or the country gentleman of his manor-house, as the citizen of his cathedral or the nobleman of his palace."

The architect of the best Gothic period made his own details and superintended the construction of the building. He was the master of the works. The great cathedrals of the Middle Ages were not designed and executed in a few months. They were the work of years and even centuries. They represent the aggregate experience of a whole people working for generations in the same direction. A single mind, however talented, cannot invent a new style. Architecture is a useful art; an adaptation to habitations of all the countless developments of science in methods of construction, warming, ventilating, lighting, draining, and protection of all kinds, and every advance or modification in any one of these elements which make up the building, must have its effect upon its form. Accordingly architecture must of necessity develop slowly and only in conformity with the progress of the various elements of which it is composed. In a purely useful art, like ship-building, for instance, this necessity of slow development is instinctively felt and accepted by every one without question. Each individual, each generation, is content to add the merest atom to the general progress, the smallest detail to the grand aggregate of effort which has converted the canoe of the savage into the great ocean steamer of to-day. So it was in the architecture of the Middle Ages and so must it always be in the development of another national style.

But the architect of to-day is not satisfied to perform so humble a part; he must distinguish himself by producing some striking originality; he must tickle some eccentric client, or be left behind in the present slavish race for existence and position. Thus it is that in Art the age of gold is the reverse of the "Golden Age," and we have in the abnormal *craving for originality* a *fourth* reason why, so long as the competitive money struggle exists, a great national style of architecture is an impossibility. Unfortunately, too, the evil increases and must continue to increase under this system each year, for as one by one the various small manufacturing and distributing firms are crushed out of existence by the great monopolies, other occupations will be sought and the professions must inevitably become correspondingly overcrowded. As competition grows hotter, the independence of the artist so indispensable for the progress of art, must diminish until artists and architects will be degraded to

the position of lackeys to a haughty and ostentatious plutocracy, and as has under such conditions always been the case in history, the degradation of art will be absolute.

A *fifth* great evil, resulting from the competitive system, pregnant with danger to the art of architecture, comes from the custom of instituting architectural competitions for the award of the most desirable building commissions. However necessary they may be under the competitive system of industry, from which they are a direct outgrowth, and they certainly are necessary under this system, nevertheless, considered from a broad standpoint they are an unalloyed evil, and the fact that under nationalism all need and excuse for them will absolutely disappear is not the least of the countless practical advantages of this system.

To avoid misunderstanding it is proper to say at the outset, that the writer has no unusual personal prejudice against competitions, inasmuch as his most lucrative commissions have come from them. Condemnation of the principle is in no respect due to any personal bitterness.

Architectural competitions are of two kinds, the first being for the selection of the architect and the second for the selection of the various contractors who are to execute his designs.

The first evident objection to the competition of architects is the encouragement of unstudied but effective and flashy design, of the attempt to produce that superficial and dangerous *originality* to which we have just referred — an effort to capture the jury, rather than an earnest and thorough study of the problem from the highest standpoint of art, through which alone a national style can ever be developed. It often happens that a month, or even a fortnight, is all the time given the architect to make his competitive drawings for a most important building. Even if the architect had no other work on hand to be “rushed,” how could a design truthfully representing all the requirements of the case, and worthy of living for centuries in monumental stone, be created in these few days? In the evident impossibility of studying all the constructive and utilitarian requirements of the case, which ought evidently to govern the form of the structure, the architect is obliged to select arbitrarily in advance some style of architecture belonging to past ages which happens at the time to be, in his opinion, most fashionable or appropriate, and afterwards mould the requirements to suit these forms as best he can.

But if it is difficult for architects to prepare their designs in so short a time, it is still more difficult for a jury to decide justly upon their merits, and a truly satisfactory decision is rarely attained.

Finally, the temptation to unfairness of all kinds, conscious and unconscious, on the part of the competitors as well as of the judges, is so great that many of the ablest and most conscientious architects refuse to participate in competitions, even though under our present system of industry they seem to be a necessary institution.

Competition among contractors for building is equally to be condemned, as productive of the most serious evils to the public, the architect, the building, and the contractor himself.

The general rule is that the contract shall fall to the *lowest bidder*. Under the sharp competition of the building trades of to-day, a contractor can only obtain a contract by offering to do the work for a sum below what all the other competitors consider safe. Work he

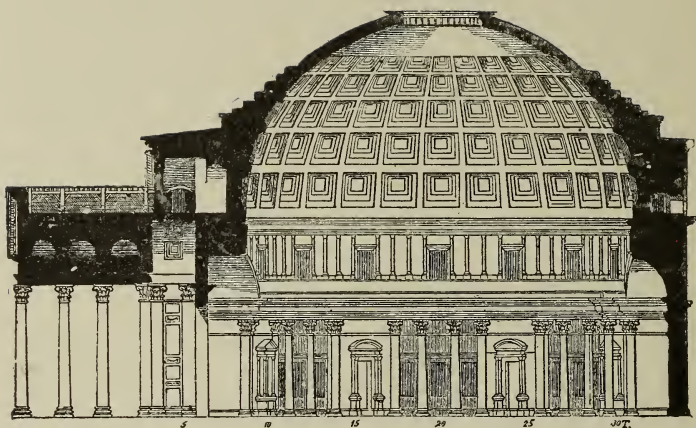
must have, however, or go into bankruptcy. He is not even permitted to know how low he must figure to get it. Considering the tremendous amount of detail and the great chances of error attending the specification, valuation and execution of an important building to-day, the risk on the part of the contractor is very great, and the temptation to dishonesty, in order to save himself and family from ruin, when he discovers he has estimated below the cost to him, is terrible. The result is endless opportunity for litigation and the need of increasing vigilance on the part of the architect to detect carelessness and fraud.

All this will be avoided under Nationalism. All buildings will belong to, and be built by, the nation. When architecture becomes truly national, a true national style will be the result.

The national-buildings will consist of magnificent libraries, churches, art-galleries, music-halls, theatres, bathis, gymnasiums, warehouses, sample-stores, museums, memorial buildings, academies of science, art and literature, school-houses, apartment-houses, railroad-stations, and the like. There will be no mean or unimportant buildings, because there will be no necessity nor excuse for such.

Competition among architects will then take the form of constant emulation in designing all these great buildings in the truest, and, therefore, most artistic manner, and without haste, each artist being ambitious to execute the commissions entrusted to him in such a manner as to deserve the approbation of his fellow-citizens, and to contribute something to the progress of his national art. The undignified and degrading necessity of catering to the whim of unartistic and irresponsible individuals will not mortify the artist of the twentieth century. As has always been the case in the best ages of art, all things will be treated artistically, and all buildings will be equally important in the eye of the artist and worthy of calling forth his best endeavors. Therefore, for the nation to require several architects to elaborate designs for the same building will be a useless waste of energy and totally unnecessary. Those architects who have the greatest genius will have ample opportunity to distinguish themselves in all they do, and if their creations, in the constant emulation of their daily work are not appreciated by a cultivated people, then no amount of special competition, under the less favorable conditions of a general scramble for some particular building, will be likely to greatly benefit them. On the other hand, young architects will not need the opportunity now afforded by competitions to "bring them out." They will be thoroughly trained, at the expense of the State, in their profession before being called upon to practise, and when once allowed to enter the lists with their fellow artists, abundant opportunity for making themselves known to fame will be afforded them.

As I have remarked before, isolated dwellings for individuals will gradually give place to handsome apartment-houses. This, indeed, will not only be desirable, but to a certain extent necessary, since, when "domestics" cease to exist as a class in the social economy, private kitchens, laundries, heating apparatus, and chambers made for these domestics will of necessity disappear, and there will then be so little left to build separate foundations, roof and staircases for, that the individual dwelling will in most cases be given up as an extravagance.



Section of the Pantheon at Rome.

THE Romans were "marvellous builders, nothing more." "That which is admirable in the Roman architecture of the Empire is the manifestation it presents of a powerful organization." The Roman, says Viollet-le-Duc "disdained art, but did not persecute it, nor did he modify it with the prejudice or caprice of an amateur: he did not enter into the question of creeds of any kind, he exacted nothing but respect for his law and submission to his administrative and political system; little would he sympathize with your concern about adopting this or that form, provided you kept to the practical conditions he imposed upon you; such matters were your affairs, not his. But art is like religion also in this, that mere toleration is not enough for it; it requires, lives by, sympathy; and when it exists among people who content themselves with not being hostile to it, who excite it neither by adhesion nor criticism, it must necessarily decline: this explains why art may decline even under a powerful and flourishing empire like that of the Romans up to the time of Constantine."

Roman architecture was grand, magnificent, but also vulgar, because the construction and decoration had no relation to one another; you may remove its apparent form, its casing of "orders," without prejudice to its stability.

The initial cut represents in section the Pantheon at Rome. The construction and simple method of lighting is admirable, but the treatment of the decoration is abominable. The double row of

orders veneering the interior walls have no constructive propriety, are out of all harmony with each other and appear crushed under the colossal details of the vault above.

But in spite of the false decoration, there is an element of grandeur and stability coming from the solid construction of the great Roman buildings which goes far to compensate for their defects. Size and stability are alone sufficient to produce grandeur in architectural design, and as Fergusson says "where sublimity is sought, they are the two elements most essential to its production, and in fact the two without which it cannot possibly be attained." Now, under the competitive system of industry, the majority of our mercantile buildings must be built for competitive purposes, which necessarily prohibits any greater solidity than is absolutely necessary to serve the immediate end in view. The risk in every financial enterprise is too great to permit of any permanent and monumental style in these buildings. Fortunes are made and lost in a day, and architecture must faithfully reflect this condition. The risk increases every day with the increasing social discontent arising from material inequalities, and instability in our architecture must result from the instability of our fortunes, and it has of late been seriously proposed by some of our merchants to construct their warehouses of wood covered with sheet metal, rather than stone, on account of fire-risks, and in the city of Lynn this idea has actually been carried out since the recent fire.

The more substantial mercantile buildings of to-day are the result of great combinations of capital and give a forecast of what the still greater combination of Nationalism will produce.

Viollet-le-Duc truly says "We must look upon all that is not made for the public — the entire public — as transient."

Accordingly we find in this feature of *insecurity* and the consequent loss of an essential element of architectural beauty, solidity, a *sixth* influence adverse to the attainment of a grand style under the existing system of industry.

Nationalism, on the other hand, will furnish all the elements of social stability, and, for the first time in history, the absolute security necessary for the perfect development of the arts, whereby will be attainable in architecture not alone grandeur but sublimity, the most impressive form of architectural expression.

Another marked characteristic of the Roman architecture was *vulgar ostentation*, the sole desire to produce an outward effect of wealth and power. The Roman Empire was made up of three classes: first, the wealthy class, absorbed in political intrigues; second, the free plebeians, who were barbarous and corrupt, the tools of the demagogues and wealthy patricians; and third, the slaves. The tendency of modern civilization is to reproduce these three classes, with whom a true art is an impossibility, and degradation a necessity. There is this difference, however, in the two states, namely, that the slaves in the villa of the Roman patrician "were certainly better lodged and treated than are our servants; they had their separate building, their baths and their rooms for exercise or amusement. Without regard to their social state, these slaves were in reality more free, more happy, and more comfortably and wholesomely provided for than are the domestics of any wealthy

householder of the present day, though indeed it is true that the former had an intrinsic value, and that their master was interested in preserving their health and strength." (Viollet-le-Duc). Yet such domestics are notoriously far better provided for than our poorer classes of wage earners.

I must be allowed to quote once more from the greatest of writers on architecture, Viollet-le-Duc, whose genius as a practical architect and engineer, and whose profound study of the theory and history of his art have placed him in the highest rank as an authority on all matters appertaining thereto. In relation to the subject under consideration he writes:¹ "The Romans never discussed questions of artistic principle; they were never enthusiasts; they were politicians and legislators; . . . they administered but did not civilize. . . Subjected to the Romans, the Greeks were only skilful practitioners; and this establishes the fact that, for them as well as for all other gifted nations, self-government is the only condition for the healthy development of art. . . A man cannot undertake to tame a barbarian (and, to the Greek, the Roman was barbarous) without becoming somewhat of a barbarian himself; and woe to the artist who yields to a master without sympathy for matters of art! The Greeks, then, very sensibly, did not amuse themselves by discussing questions of style with the Romans, for they knew they would not have been understood, and, while submitting to the rigorous conditions imposed by the Romans upon their architectural problems, they contented themselves with the more humble duties of decorator, — their aim was only to gratify the pompous taste of their masters, and to charm them, if possible, by a brilliant, if not elegant, execution." As with the Romans, so with us to-day. "‘Making an appearance’ has been the order of the day; for appearance has been readily taken for the reality, and the tailor has made the man more perhaps than at any other time. The question has been, who should make the most show. . . Little sterling worth, great vanity and desire to make a display, and as the result of this a social condition in which envy becomes the prime mover; that is an incessant and immoderate desire to seem grander people than we really are, and a secret hatred for all that is produced superior to what we can exhibit. . . The architecture suited to our times is not an art that is a mere luxury for the delectation of a few amateurs, a select portion of society; it must be an art which belongs to all. . . It is an easy thing in architecture to make an imposing display, with plenty of money to lavish; the real difficulty is to give a perfume of art to the most common and the most simple things, and to know how to remain sober and unostentatious in the midst of splendor. . . When art has become a mere matter of luxury to the few and an affair of simple curiosity and wonder to the many, then it has ceased to be true art, and has indeed relapsed into barbarism."

Accordingly, a *seventh* barrier in the way of our acquiring a worthy national style, under the existing social conditions, is the same which corrupted the architecture of imperial Rome, the inordinate desire for ostentation, especially on the part of the "*nouveaux riches*," à

¹ I use, in my quotations from Viollet-le-Duc's "Discourses," the words of Mr. Van Brunt's admirable translation.

class rapidly increasing under the conditions provided by the "*laissez-faire*," or "private monopoly," system of industry.

Still another, an *eighth*, impediment to the growth of architectural art is due to the very opposite evil, namely *poverty* and *parsimony*. No sooner has the architect become interested in his theme, and elaborated his design with some artistic refinement, than he is directed to "cut down." The material is too expensive for the appropriation. A cheaper one must be substituted. An imitation or a veneer is ordered in place of the genuine material. A little here and a little there must be saved, until the work of art becomes a very commonplace affair indeed.

Of course, a due regard for economy does not of itself interfere with artistic expression. On the contrary, it has often been the basis and origin of style. But a parsimony, either voluntary or forced, which discourages *all* artistic effort, insists upon shams, and refuses improvements in sanitation and convenience, involving but a slight increase in cost, is an evil growing out of the existing absurd system of industry, of tremendous importance in its effect on the architecture of our country. Everywhere the eye is accustomed to the sight of mean and sordid structures, hardly one in a hundred showing even an attempt at artistic treatment, and thus the public taste and sympathy for the beautiful is blunted by the constant contemplation of the base, commonplace and uninteresting; and it is certain that a refinement or distinction in architectural style can result only from the prevalence of refined taste throughout all grades of society cultivated in an atmosphere of art.

As an illustration of the effect of economy in hindering the development of style, I may instance the following:

It is known that the products of the combustion of illuminating gas are highly injurious to animal and vegetable life, a single ordinary fishtail gas burner, used in a room, being equivalent to from four to eight men in air consumption.

Plants are killed, books and textile fabrics injured, silver blackened and lungs corroded by the sulphur compounds of this combustion. It is, therefore, extremely important, where gas is used for illuminating purposes, that the burners should be ventilated. It is not sufficient that ventilating openings should be made merely in the ceiling over the gas-burner or chandelier, as is the custom where ventilation is attempted at all, because openings so placed carry off the pure air supply, and only serve their purpose of removing the products of gas combustion completely when made large enough to remove *all* the pure heated air supply as well.

In most buildings the fresh air supply should be at the top of the room, and the foul air exhaust at the bottom. Accordingly, gas-burners should be ventilated immediately at the jet, and with flues large enough only to remove the products of combustion, leaving the surrounding pure air unaffected. With this end in view, a number of ventilating chandeliers, two of which are shown in the accompanying cuts were designed for a hospital. The space occupied by the ventilating flues was no greater than that ordinarily taken up in the designs for gas-fixtures by meaningless scrolls and hollow casings applied solely for the purpose of increasing the apparent weight and size of the gas supply pipe and improving its contour. But, as no chandeliers

had at that time been made after the principle shown in these designs, their expense would have *somewhat exceeded that of ordinary fixtures*, and for this reason the idea of using them in the hospital was finally abandoned. The lower chandelier in the cut was designed for the dining-room, and had eight burners surrounding a central jet, with reflector. A bell was formed directly over the central burner, from which ascended the main ventilating flue, enclosing the gas supply pipe. An annular bell, over the eight surrounding burners, collected their products of combustion, and carried them, by branch pipes, into the central flue. All the flues and bells were constructed double, with suitably ventilated interspaces, as a protection against discoloration by heat. The lower rim of each bell was provided with a small gutter, to catch the water of condensation. The upper figure was designed for the parlor of the hospital, the elevation being shown on the left and the section on the right. Both of the designs were kept simple, in accordance with the instructions of the Building Committee. But, evidently, designs of great beauty might be made on this principle, and a proper development of the idea would have given infinitely more "style" in the design of gas chandeliers than the senseless elaboration of useless piping which has been the fashion. By this arrangement, not only might the air of the room have been maintained pure from gas contamination, but the heat generated by the burners would have been sufficient, properly applied, to have exhausted the foul air from the entire building at the time of day when the greatest quantity is generated, namely, when all the occupants of the building are collected within the house at evening in the dining or reading room. Nevertheless, after the estimates of cost had been obtained for manufacturing these ventilating chandeliers, the Committee found they would exceed their appropriation, and abandoned the idea of using them.

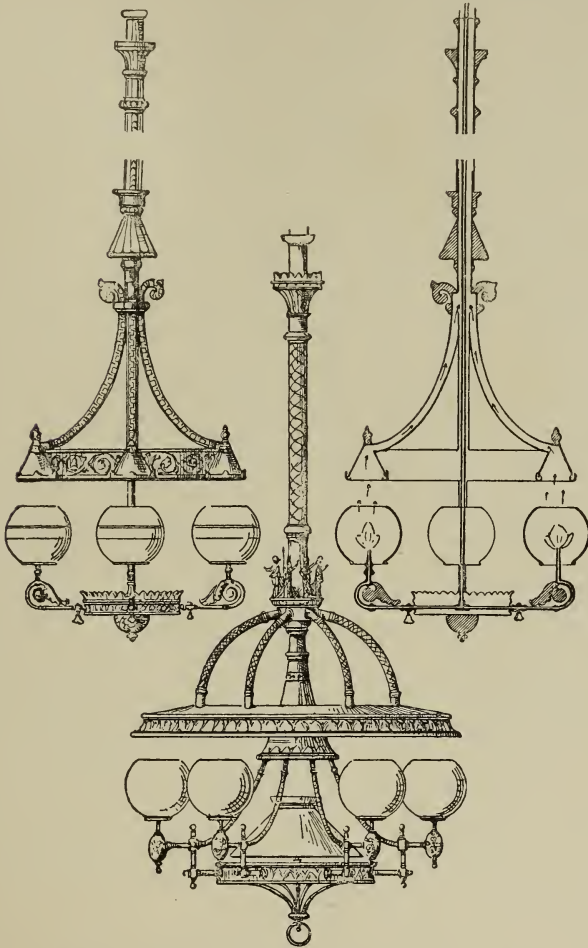
Now, therefore, owing to this unfortunate, though entirely conscientious, economy of the Committee, the occupants of these rooms at night are obliged, when the ordinary chandeliers are fully used, to breathe air contaminated not only by their own exhalations, but by the combustion of a dozen burners, equivalent, in the fresh air pollution, to at least 72 adults.

Under the belief that, if the importance of sanitary gas-fixtures as ventilators could once be appreciated by the public, suitable designs would immediately be furnished by specialists in chandelier work, which could be executed at a cost as low as corresponding ones constructed with the ordinary sham casing and scroll work; a number of designs, with descriptions, of these ventilating chandeliers were published in 1883, in a book on the heating and ventilating of buildings,¹ and a prominent firm of manufacturers of chandeliers executed one of these designs, and put themselves to some expense in the effort to create a demand for them. It is doubtful, however, now that electric lighting is supplanting gas, if the ventilating chandelier will ever become fashionable. The public are not alive to its importance where gas is still used, and no one cares to pay the first cost of introducing them, consisting in making novel designs after a principle totally new in chandelier work, requiring unusually skilful specialists and an extensive plant, new patterns, moulds and spinning blocks

¹"The Open Fire Place in All Ages," published by Ticknor & Company, Boston.

necessary for their execution on a large or paying scale. The public will not, and the manufacturers cannot, undertake this expense. Each waits for the other, and thus nothing is done.

One other illustration of the lamentable effect on our architecture



Ventilating Chandeliers, from "The Open Fireplace in All Ages."

of the false economy necessitated by the existing method of leaving to individuals duties and responsibilities which should be borne by the nation, must suffice under this heading.

There is no work which can more properly claim the highest wisdom and resources of the whole people than the education, both mental and physical, of our school children. Their training should be entrusted only to those who are most thoroughly equipped by nature and education for the work, and the schoolhouses should be built in the most perfect manner known to the art of architecture, not alone from a sanitary and truly economic, but also from an artistic point of view, all these items being necessary for the complete physical, intellectual and moral development of the children. This truth is admitted by every one, yet under Nationalism alone is its practical application possible. So long as the existing state of society lasts, many children will, and must, be turned over for their schooling to irresponsible and incompetent teachers, and confined in insanitary and unsightly school buildings, for the simple reason that the majority of small country towns and isolated communities, which, as compared with the nation, become nothing more than irresponsible individuals, do not and cannot possess the means and intelligence to do otherwise. Almost any architect can testify to the truth of this from instances coming within his personal experience. A particularly striking one, which must serve for my illustration is the following:

A Town Committee was appointed to build a schoolhouse. The Committee knew, however nothing whatever about the requirements of the building, except that it must be large enough to box in all the children who could afford to go there, and that a certain sum of money had been appropriated for the purpose. The plans were drawn, however, with great care, especially as to sanitation. Ducts for foul air exhaust were carefully arranged, so as to perfectly ventilate all parts of the building at all times, and to the extent needed, without great expense either in first cost or in use, and the foul air was expelled by means of the heat of the smoke of the heating apparatus, through a somewhat ornamental chimney, prominent in the design of the exterior.

The committee sat on the design, accepted it with expressions of approval and ordered it to be executed under their own superintendence. It was executed. When the outside had been completed and the great ornamental ventilating chimney had been built, the committee decided to "cut down" in the expense of finishing, and all the ventilating ducts were, without a word's notice to the architect, quietly *omitted*! Absolutely no provision for air supply or exhaust was substituted in its place, and the magnificent exhaust chimney with its scientific flues, became a hollow mockery and an architectural monstrosity. To-day the miserable school-children are breathing over and over again one another's breath, while the townspeople look upon the mammoth chimney with as much pride and pleasure as if it were really performing its legitimate office of pumping pure air through the lungs of their children.

The lesson we have to learn from Roman architecture is not entirely a negative one. The construction and planning of their public buildings is worthy of the highest admiration whatever may be said of their elevations. Particularly applicable to our present subject is the study of their magnificent public baths—a study which Nationalism will render fruitful in a practical way. The Roman Empire set a noble example to all succeeding nations, of furnishing

the whole people with the luxury and salubrity of public baths on a grand and liberal scale.

We, who call ourselves civilized, allow the masses to live in filth, though rivers and oceans of pure water flow everywhere at our feet, and machinery for transporting, storing, heating and cooling that water, far superior to that which the Romans employed, is at our disposal. Yet the poorer classes reek in filth, and loathsome epidemics spread over the whole community in consequence of our neglect.

The magnificent baths of Caracalla, however, give us a faint idea of what Nationalism will do for the people in this direction.

In the front part of the building on each side of the main entrance are small private baths in two stories for those who do not care to enter the main building.

The main entrance to the public baths is through a grand portal in the centre of the front. We enter a vast building containing great swimming baths of cold, tepid and hot water, each with spacious vestibules, dressing and service rooms and other appurtenances and all grouped in such a manner as to give the utmost convenience of access and egress without draughts or danger from overcrowding or disorder.

Within the enclosure are gardens and fountains and courts for games and gymnastic exercises, provided with seats for spectators. We find also porticos and pavilions for lectures and discussions and libraries and reading-rooms for study.

The perspective view represents a restoration of the cold bath, or *frigidarium*, which is the largest hall in this building.

It is open to the sky, under the principle that protection from rain is unnecessary for bathers in cold water in a climate like Rome. The warm bath, *tepidarium*, seen in the view beyond the three great arches, is roofed over, as is also the hot bath, *caldarium*.

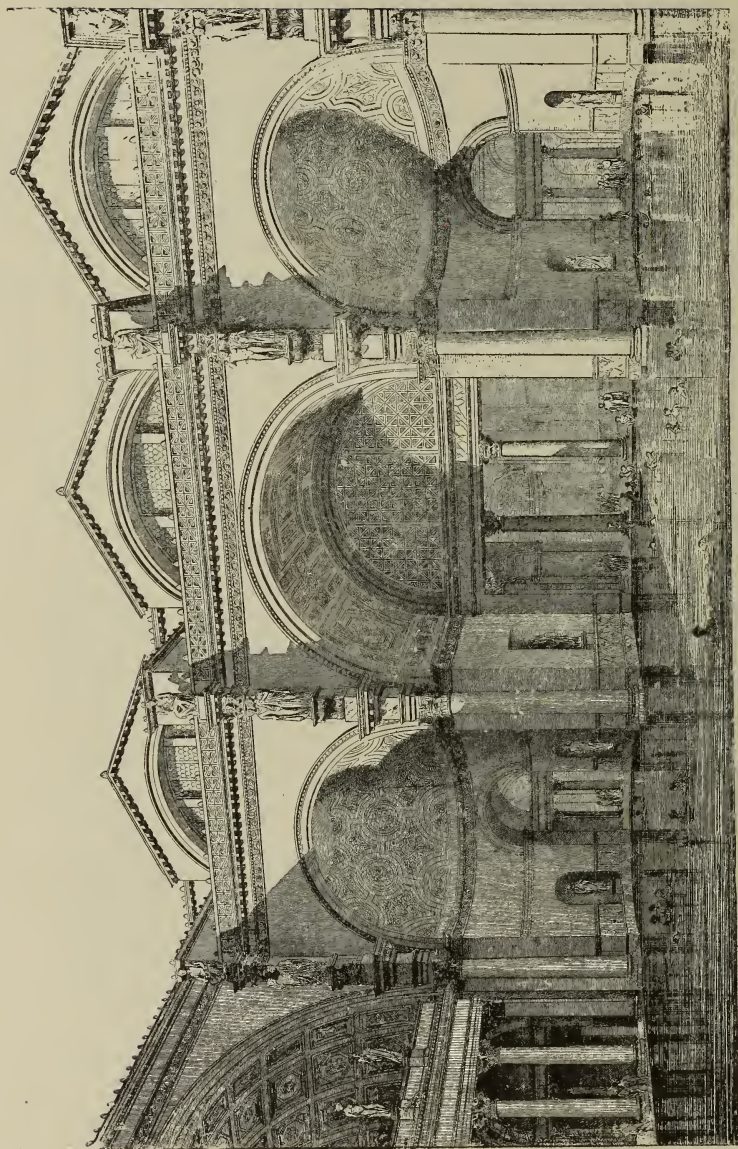
A *ninth* reason for the decline of architecture under the existing system of exclusiveness and individualism, is that the sister arts of painting and sculpture have been divorced from architecture.

In the grand styles, the former existed with and for the latter, which, in its turn, was worthy of the distinction of claiming painting and sculpture as her handmaidens; and it was in the harmonious union of the three that the greatest distinction of each lay.

Then the artist forgot himself in his art, and we seldom find his name inscribed upon his works. Now the artist forgets his art in himself, and the aim of each individual is to make his own work the most prominent feature in the completed building, and each takes good care that his name shall appear in as conspicuous a place as possible. How could it be otherwise with the poor artist, whose family depend upon this advertisement, perhaps, for their privilege of existing!

Paintings and statuary are executed entirely apart from, and independent of, architecture, and when afterward they are brought together, they as often mutually injure as improve each other through want of harmony of expression and scale.

Finally the *tenth* and last corrupting influence upon our architecture is the indifference of the masses to the essential element in design of *truth*.



Baths of Caracalla, Rome. From Viollet-le-Duc's "*Discourses on Architecture*."

The present is an age of hypocrisy and misrepresentation. Our whole social and industrial system is founded on the colossal inconsistency of permitting, in a nominally free country, one individual to practically own the soul and body of another. In a country where "all men are born with equal rights before the law," twenty-five thousand persons, in appropriating from the rest one half of all that is produced by the entire sixty millions, create a conflict under which a vast majority of the entire energy of the whole is wasted. Industrial warfare breeds dishonesty as its necessary fruit, and corruption even in the highest offices of the country has become so common as to be accepted as a matter of course.

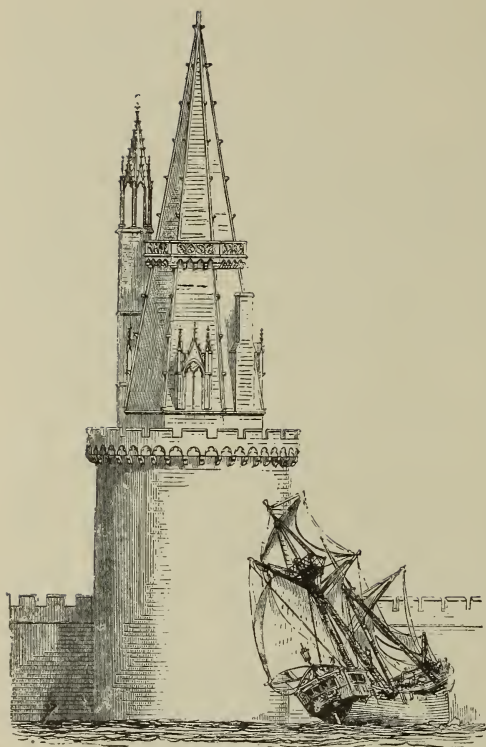
With so general a disregard for the truth in everyday matters, we cannot expect to find a strict observance or appreciation of it in art, and so long as a system of industry exists which places a premium on dishonesty, falsehood will continue to appear everywhere in design. We shall continue to see columns whose form indicates the function of *support*, used as a decorative veneer upon façades where they support nothing; cornices and pediments elaborately designed with the sole view of shedding rain water, used in interiors where rain never falls; sham windows and doors built upon blank walls; buttresses erected against piers having no interior vaulting to sustain; walls massive enough in design to serve for a fortress or tower, supporting the lightest of structures, and cheap materials everywhere used in imitation of expensive ones.

Where such falsehoods exist, style in architecture is impossible, since style in art consists only in a graceful expression of the truth.

Thus we find that Nationalism will reproduce all the conditions favorable to the development of a noble style of architecture, and eliminate the many unfavorable ones at present existing.

With the great advances made in the present century in the science, materials and machinery of building, corresponding advances would have been made in the art of architecture had the social conditions been less adverse. For a more complex and perfect civilization permits of a higher form of art expression, just as, in the animal world, a higher type of beauty is possible with man than with the mollusk. So, in architecture, the higher civilization and the many new and peculiar conditions furnished by Nationalism must of necessity evolve a style as much nobler than any which has preceded as the civilization itself will surpass that of any other age.

As an illustration of the peculiar features which will distinguish this new style, we may take the element of "extensiveness." Buildings capable of accommodating the vast assemblies which the co-operative system in a great nation will bring together, must be constructed on a far grander scale than anything heretofore known, and new methods of construction will be required, involving the use of metal and all the science and skill of the engineer. Undoubtedly, by the use of aluminum and aluminum-bronzes in place of stone and wood, in vaulting, framing and finish, a lightness, strength and power of resistance to fire will be attained, which will enable areas of a magnitude hitherto undreamed of to be safely covered without interior support, and thus this element of extensiveness, when combined with strength and refined with art, will yield a style of architecture incomparably grand, and fitly characterized only by the word sublime.



WE have based our calculations as to the amount of wealth annually produced under Nationalism upon the supposition that application to work on the part of the people will then be only as close as it is at present.

There are, however, many reasons for believing that application will be far more intense and its productiveness correspondingly increased, and that idleness will be comparatively rare in a social state in which faithful individual effort is assured the reward of all that is desirable and in which disgrace and deprivation are sure to follow indolence or neglect.

After what has already been said in this article it might seem superfluous to consider further these incentives for application, but so much depends upon a clear understanding of this point which has so often been a stumbling-block for those who discuss Nationalism without knowing what it is, that a few words in relation to incentive will be pardoned.

In just what manner the wealth of our Coöperative Commonwealth will be distributed among the citizens for their services, it is evidently impossible to foretell. Probably in different ways at different stages in the nationalization of industry, the principle of distribution on a basis of *effort* rather than *ability* becoming more and more recognized. This is clearly the only just basis of distribution, and is accordingly, for this reason, in the end inevitable. The capacity for wealth production of a nation being the result of ages of civilization, every individual, as a product of that civilization, is entitled to an equal share of the wealth due thereto, irrespective of any special

ability or lack of ability he may individually have received from nature or education, provided only that he does his best.

As in the private family it is seen to be just that each child should receive an equal share in the family goods irrespective of his mental or physical ability, the feeblest in mind or body receiving even greater rather than less attention as a partial compensation for their natural deficiency. So in the great human family which is but an extension through a number of generations of the private family justice and humanity will demand the same material consideration for all who do their duty irrespective of the accidents of their birth.

Two brothers, A and B, have inherited to-day equal wealth. A war breaks out. A, being patriotic, leaves home and family to serve his country. He is wounded in battle and loses forever his ability to provide for his family. B is unpatriotic and selfish. He remains at home and amasses a princely fortune in army contracts. The descendants of the patriot, deprived of capital and education, sink lower and lower under the heartless struggle for existence, called free competition, in which now only giants can succeed, while those of the unpatriotic brother, the "individualist," obtain the highest education and enjoy every form of luxury.

Every one recognizes this as unjust, but all do not see that the community in recognizing a system of unrestricted competition in industry is responsible for it. The descendants of A and B are equally entitled, so long as they do their duty, to an equal share in the fruits of civilization irrespective of the action of any particular individual, or individuals, in the line of their pedigree, since all are descended from the same common stock—children in the same human family—which produced those fruits. Hence the nation should own all the machinery of production in order that this equal distribution may become practicable.

But, inasmuch, as the nation is gradually assuming control of certain industries which already owe their existence to governmental intervention or franchise, there is and will continue some time to be a transition period, in which a basis of distribution in proportion to ability will prevail.

In this article, however, I refer to Nationalism only in its completed and perfected form, and assume a basis of equal distribution dependent upon effort alone.

The principle of equal pecuniary reward to all workers irrespective of their productive ability has been the cause of much unfavorable criticism of Nationalism for three reasons: First, on the ground that such equal distribution would deprive many having superior ability and industry, of luxuries which they are now able to obtain; second, that it would lead to a wholesale shirking of work by the lazy and selfish, and third, on account of a false idea that a pecuniary reward is the only one which will, or ever can appeal to the average human being.

The first of these three objections is answered the moment we fully realize the prodigious increase of productiveness effected by Nationalism, whereby more than sufficient is produced to provide every individual with every want and luxury which can reasonably be desired in a community of workers.

Let us examine the second.

Idleness, which under the competitive system is not only allowed

but even encouraged, would be discouraged under Nationalism by universal condemnation.

To-day unproductiveness on the part of the wealthy is regarded rather as a mark of distinction than the reverse, and in England, as a *necessary condition* of the highest social distinction, whereas under Nationalism, it will be regarded as the most profound disgrace.

Now moral and intellectual effort and achievement, the real wealth producers, stand below financial shrewdness in the rewards and honors of society.

Under Nationalism they will attain the highest rewards and honors within the bestowal of the people, because it will be for the interest of all to have this so.

Now, not only is there no law for the adequate punishment of idleness, but in the present condition of things there could be none. The tramp may be imprisoned, but imprisonment for the tramp means comparative comfort and security. He has nothing to lose, and this is the case with most idlers in the two extremes of social position.

Under Nationalism idleness will be punished by disgrace and the deprivation of all the great wealth and luxuries the nation would otherwise bestow.

Under the present system, work is arduous and unceasing. Under Nationalism it will become the pleasurable exercise of one's strongest faculties and tastes for a definite and useful purpose, an exercise which increases in intensity of interest as those faculties and tastes are developed by cultivation.

Man is by nature ambitious and active. Indolence is the result of disease or discouragement. When in a normal and healthy condition, man, like all animals delights in the exercises of all his functions. Such exercise is a structural necessity the neglect of which results in pain. No severer punishment can be inflicted upon a vigorous nature than forced inactivity. When each individual is allowed to pursue the special activity for which he is best fitted, as will be the case under Nationalism, the danger will be, not that he will work too little but that he will work too much. It must be borne in mind that under the competitive system every kind of occupation is and must be made more or less disagreeable by the very nature itself of the competitive struggle, and it is this alone which now renders work arduous. Thus in the practice of architecture, the detective, legal and financial duties, worries and limitations, and the hurry necessitated by the competitive state are the items and the only ones which render the occupation of the architect irksome. Under Nationalism the expression "work" will acquire an entirely new meaning. It will signify "*interesting occupation*" which corresponds simply with our expression "*play*"; the only difference being that it will be of the kind in which the interest constantly increases through life with the increasing knowledge and skill gradually acquired in the game as it progresses.

When the interests of all become identical, there will be a strong and common motive to make every occupation as pleasant as possible, and when the united energy of an entire people is directed upon the attainment of this object, success will be certain. The architect of industrial buildings instead of being hampered by restrictions urged in the interest of larger profits to capitalists will be

encouraged to plan and construct workrooms healthy, comfortable and attractive by thorough ventilation, lighting and every form of sanitary construction and appropriate artistic treatment; this new motive for making every occupation as pleasant as possible will be a strong incentive to supplant by machinery all those kinds of manual work which are, by their nature, unhealthy, dangerous, or especially disagreeable.

The third cause of criticism, that a pecuniary reward is the only one which can possibly appeal to the average man, has been to a great extent answered by what has already been written.

This much, however, may be added, that whatever may be the success of the method of recompense proposed under Nationalism for the encouragement of good work, the method now in vogue must be pronounced a total failure. The hardest workers now as a rule receive the smallest pecuniary reward and honesty and generosity stand little chance before sharpness and selfishness.

The money gauge is evidently totally inadequate to measure intellectual effort. The custom of gauging the value of an artist's work, for instance, by a uniform percentage on the cost of the building tends constantly to the deterioration of his art. In a society which pretends to make the reward proportional to ability, the highest intellectual and emotional effort is measured by the same material standard as a purely mechanical or speculative operation backed only by large capital. The designing of a cathedral may produce as much as the commission on a cargo of hogs or on the speculation of a stock gambler, either of which might require but the writing of a single letter.

Under Nationalism no attempt is made to perform the impossible task of measuring mental effort by material standards. Coöperation enables the nation to furnish its citizens freely with all the material wants, and intellectual ability and effort are recognized and rewarded by promotion into higher intellectual authority.

But even if pecuniary reward were made dependent upon ability (real and not fictitious) under Nationalism, instead of upon effort, the result would, after all, in either case, be very nearly the same. For it must be remembered that all education being free, every individual will be supported by the State during the courses of schooling and apprenticeship for life's work, or, say, up to the age of 25. Then, if we assume that compulsory service to the nation terminates at the age of 45 or 50, after which the nation resumes the support of its citizens, pensioning those who have manfully labored to support the nation in peace as it now does those who have bravely slaughtered their brethren for their country in war, there will remain only from 20 to 25 years, which will be affected by the question of method of remuneration.

Under the influence of mutual helpfulness which common interests would foster all work will become respectable and respected. There will be no so-called "menial" service. There will be none of the senseless distinctions in the "*respectability*" of different occupations which exist now; as, for instance, between gambling at wholesale as in the stock-exchange and at retail, as at the gaming-table, the former being eminently respectable, though infinitely more injurious to society as affecting countless outsiders; and the latter eminently disgraceful, though harmful only to the individual gambler, himself.

Or, as between the skilful mechanic and the wealthy Corporation Treasurer of to-day, the former often requiring infinitely more brains and experience than the latter, who may delegate the real work to assistants. Yet custom places the latter occupation far higher, socially and financially, than the former.

Under Nationalism a liberal education will be given alike to all, and machinery and organization will do much of the work now left to individuals, relieving men of unhealthy and tedious drudgery on the one hand, and of extraordinary responsibility on the other.

The marvellous financial and executive ability now required of business managers to launch and afterwards pilot safely through the stormy seas of competition, every important mercantile or speculative enterprise of to-day, will be supplanted by the perfect system of the great industrial army of Nationalism. Then the duties and responsibilities under this system, both of officers and men, will be so equally distributed among all the workers that none will ever feel overburdened by an undue share. Accordingly the remuneration of all workers, even on a basis of ability, would be far more equal than now, and those who fear disastrous results from the adoption of the juster basis, very greatly overestimate the danger.

To illustrate my meaning let us imagine for instance a possible manner in which the Department of Architecture may be organized under a Nationalist administration, without assuming, of course, that the details introduced for the purpose of completing the picture are indispensable to the general plan.

In order that architects may supervise the erection of the structures they design, the national architectural offices will have to be distributed throughout the country in accordance with the requirements of each locality; and for the convenience of the profession they will be built adjoining the great sample-stores of the district. Evidently a much smaller number of architects will be required for a given amount of building than now. Probably a very small proportion of the architects and draughtsmen now practising in Boston, if methodically employed, and relieved of the legal, financial and competitive work now exacted of them, could suffice for the purely architectural work they perform. But under Nationalism, however, the duties of engineer and draughtsman will devolve upon the architect, and as the enormous increase of national wealth will increase also the amount of building, all of which will be placed in charge of architects, the profession will undoubtedly be much larger in proportion to the population than now.

Accordingly the department of architecture, sculpture, and painting for the Boston district will comprise a hundred or more architects. They will occupy a building appropriately designed for the purpose, and as the structure will stand as a permanent expression of the state of our national art at the period of its erection, its proper architectural treatment both exterior and interior will be a matter of patriotic solicitude to every citizen.

As it is indispensable for the highest development of architecture that sculpture and painting be closely allied thereto, or rather, form an essential part thereof, the same building will as intimated contain also the studios of sculptors and painters as well as a museum of the best products of these allied arts.

The site will be made worthy of the structure by landscape gardening, fountains and statuary, arranged in such a manner that the approach shall do honor to the monument. The building itself, both without and within, will be richly adorned with color and sculpture appropriate to its purpose and an atmosphere of refinement will pervade every part inspiring the occupants fittingly for their work. It will face diagonally with the points of the compass in order that all sides may be reached by the direct rays of the sun at some time during the day, the new streets of the city being laid out with this in view.

There will be no "draughtsmen" in the present acceptation of the word. Every part and detail of a building being equally important in the eye of the artist will be the work of his own hand. The enlarging and copying of drawings will be done by photographic and other mechanical processes conducted in a special department of the building devoted thereto. Thus, after the architect has drawn his quarter-inch-scale working-plans, they will be taken into the mechanical department, and such portions of them as the architect desires will be instantly enlarged to, say, an inch-scale, and returned to him. These enlargements will be corrected and refined by him, and then still further mechanically enlarged to full size. Once more the architect will alter and perfect the final enlargements, after which all the drawings will be ready for copying in the mechanical department for distribution among the various builders.

Aided by this mechanical enlarging process, the architect will be encouraged always to begin his designs upon a very small scale, say an eighth or sixteenth of an inch, following them up with many successive enlargements, by which process much greater boldness and simplicity of effect, and much more perfect harmony of proportions are attainable, than is possible without the aid of these successive studies.

In this way the architect will be absolutely relieved from all the purely mechanical and laborious processes he is now subjected to, and thus be free to devote his attention to every detail of the design. His only assistants will be his fellow artists, the sculptors and painters, with whom he will be in constant communication throughout the work.

Of course, under the competitive system all this would be impossible. It could only be carried out by the aid of the wealth of a great Coöperative Commonwealth and on a grand scale. Though a syndicate of talented architects formed on some such basis in any of the great cities even now would probably meet with considerable success both as a financial and economical enterprise.

Since architecture is even to-day, with all its needless drawbacks, one of the most attractive occupations, there will under Nationalism when these drawbacks are removed, be so large a number of aspirants for its practice that only those having exceptional talent or even genius for it will be enrolled by the nation. Undoubtedly the principle of longer working-days for attractive and shorter for unattractive occupations will be adopted by the Commonwealth so far as practicable. But were this principle alone relied upon for equalizing the applications, the days of the most attractive ones might have to be prolonged beyond the limit of healthfulness, and one of the

dangers most to be guarded against under Nationalism will be over-application. Even now history is full of cases of physical and mental injury due to over-application for love of work on the part of artists and talented men; and under Nationalism the favorable conditions for work will multiply such cases indefinitely unless wise measures are taken by the administration to provide against it. The people will then be as solicitous for the life and strength of its workers in peace, as they now are of its fighters in war.

Accordingly the length of the architect's working-day will be limited by Nature's laws of health, and it is certain that by the observance of these laws, a greater amount of work will be accomplished in the long run than by their neglect. Therefore a system of selection for talent will govern the admission into the architectural ranks, and it is in this manner that the law of the survival of the fittest will be carried out under Nationalism. It is in this way that Nationalism is seen to be in the direct line of evolution to a higher plane of human life.

How now will the various buildings to be erected by the nation be distributed among the national architects without overworking some and underworking others, and yet in a manner which will yield to the nation the full benefit of the peculiar talents of each individual.

The constantly increasing complication in all industries arising from the rapid progress of science and invention has evolved the *specialist* in the various professions. As in medicine the separate parts of the body have become the subjects of distinct sciences each requiring years of special application for its mastery. So in architecture, special research and experience are requisite for attaining the best results in designing the various kinds of buildings needed. Thus the building of school-houses has become a science of itself. So it is with libraries, and equally with theatres, churches, bridges, hospitals, and, in short, all buildings erected for specialists will require specialists for their erection.

Yet it is, all the same, indispensable that the specialist should be grounded in the principles of general practice, and with this in view the first training of all architects is the same.

The department of architecture will then be divided up into groups of specialists, natural aptitude guiding one individual towards the scientific or engineering side of architecture and another toward the more distinctly æsthetic, emotional, or poetic side, the former corresponding somewhat with the civil engineers of the present day and the latter with our sculptors and painters.

This subdivision into groups of specialists will not only greatly facilitate the distribution of work but it will form an element of harmony and good feeling among the practitioners by excluding, so far, feelings of jealousy which might arise were there no such natural distinction between the workers.

But a still further security against the growth of petty rivalries and jealousies lies in the fact that important work will be provided for all at all times, and that it will be almost impossible to say in the case of nine-tenths of the buildings erected under Nationalism which will be the most important, especially from the standpoint of the architect. The element of size alone will not constitute superiority, for the smallest buildings may be dedicated to the highest purposes.

Richness of material and decoration alone will not necessarily open the greatest field for the architect, for the work of the sculptor and painter will predominate in these. Importance or nobility of destination will not constitute superiority; for under Nationalism all forms of honest work will be seen to be equally noble, and in a like manner the buildings in which such work is performed, and this will be recognized in its true relationship when no longer overshadowed by the money estimate.

I fail, therefore, to find any opportunity under such a system, for the development of petty jealousies predicted by unbelievers in Nationalism, in architecture at least. But I do find the amplest incentives for the noblest form of friendly emulation. Natural genius will, of course, show itself in its works, and lead to prominence, but as soon as the great truth is generally recognized, that, for the highest good of our national architecture, the individual must be made secondary to his art, that personality must be sacrificed for principle, and that the utmost attainment of genius is the contribution of a microscopic atom to the general progress; then will a jealousy due to inequalities of natural endowment be impossible, and no other cause for such a feeling will exist.

Thus it is clear that equal material remuneration among architects at least for equal effort will be a perfectly just and extremely desirable principle, beside relieving artists of all sordid considerations of pecuniary emolument.

The interior administration of our architectural department will be very simple, the utmost possible freedom from unnecessary restrictions of every kind upon individual action being aimed at. Each group of specialists will elect from among its number its Representative or Foreman, and these Representatives will in the same manner elect its Chief of the District Department of Architecture. The duties of these officers will be to place the buildings to be erected in charge of the proper architects, to keep account of the general progress of all work in their District and render a proper report of such work at proper intervals.

It seems to me unnecessary to insist that though election to these offices will be viewed as an honor as implying confidence on the part of the constituents, yet there will be nothing in them of a nature to incite to corrupt practices or intrigue for their attainment. Indeed, most true artists would prefer to be free from the somewhat distracting duties and responsibilities attending them.

At the present time it is customary for the architectural student to obtain the practical part of his training by serving as draughtsman in some architect's office. Under Nationalism a far better and more thorough system of preparation will be provided for the young architect.

A special Preparatory School of Architecture will form a wing of the main building already described, in which students will receive a complete course of architectural and engineering training, theoretical and practical.

This school will possess immeasurable advantages over any now existing in the world, or which could exist under the competitive system.

In the German academies thorough courses of both architecture and engineering are given under the same roof open to all.

The leading practising architects of the country are employed to give lectures and practical courses of instruction at the schools at certain hours, usually each instructor giving from four to eight hours a week to this work.

The principle of instruction in the French Academy at Paris, is very different from the German. Distinguished practising architects give courses of instruction, it is true, but it is a matter of etiquette for a pupil to confine himself to a single instructor during the whole academical course. The result is that the student sees very little of the master, and depends for his advancement substantially upon the emulation existing among the pupils themselves, and the example of the most proficient among them. Such a method of instruction may be good for the painter and sculptor, but for the architect it is totally inadequate.

In both academies, regular monthly or quarterly competitions among the pupils on a given programme constitute prominent features of the course.

Our nationalist school will retain whatever features are good in both French and German schools.

The "*concours*" will be retained, but instead of being competitions for the solution of some programme arbitrarily composed for the occasion, they will be competitions for the solution of programmes for buildings actually to be executed for the nation by the practising architects themselves who constitute the Board of Instructors in the Academy. As in the German schools now, the practising architects under Nationalism will give courses of lectures and of instruction in design to the students in the adjoining building, as a regular part of their professional duties, devoting thereto, perhaps each from four to eight or more hours a week. The course in design will consist in the practising architect giving his pupils for a programme the actual building (no architect having charge of more than one building at any time) he is himself commissioned to erect at that time. The programme will be presented to his pupils after he has prepared his first working-drawings precisely as it was presented to him by the administration, with such additional explanations as he may deem necessary for his pupils; and after they have completed their drawings, each will have the advantage of comparing them not only with those of their fellow-pupils, but still better with those of the master himself as prepared for actual execution. The importance of this feature of our academical course as a means of inducing a serious, intelligent and practical study of their plans on the part of the student is inestimable. The training at once assumes the attractiveness of reality, and both pupil and master are immensely benefited at the same time. The architect acquires the invaluable habit of expressing his ideas in the clearest manner by word and pencil, and is obliged to have a good reason for every architectural form which the conditions of the problem have evolved. Everything must be truthful, logical and refined in his design in order that it may serve as a perfect model for his pupils. On the other hand, any peculiarly happy points which may be developed by the studies of the pupils will be gladly incorporated by the architect in the plans to be executed, such adoption not only encouraging and gratifying the pride of the student but benefiting the public as well.

After the plans are completed and during the erection of the building, an important part of our course of instruction will consist in the inspection of the work by the pupils under the architect's guidance and explanations, from time to time as the work progresses.

Thus the training of the architectural student for his professional work will be scientifically conducted in the most thorough manner both theoretically and practically. He receives instruction not from one architect alone but from many, all working harmoniously together in one style, the national style, and all interested in his progress.

The haphazard and superficial instruction which the student of to-day receives as a draughtsman in his wanderings from office to office, picking-up here a little and there a little, copying letters, running errands, tracing ill-digested plans which he only half understands, and perhaps never sees executed, haggling for an increase in his salary, and ever harassed by petty rivalries and jealousies, will be happily done away with forever.

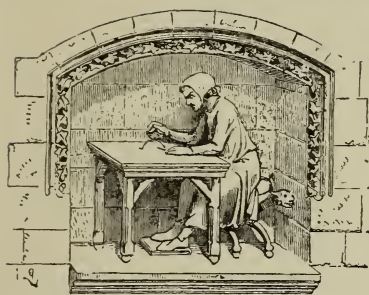
The various building trades will work in harmony with the architects. Like them they will be divided into specialists in each great department. Thus in the mason's trade, the same individual will take charge of the masonry of the same kind of building as a specialist in that class, and in this way builders and architects in the same class will become personally acquainted with one another and with their peculiar work, and the work of both be thereby facilitated and improved. The specifications of the architect as to the materials to be used will consist simply in designating these materials through their numbered samples in the great sample-store adjoining the building of the department of architecture. The same numbers will be affixed to the samples published in the great national catalogues, so that the builder will be obliged only to refer to these to enable him to carry out the terms of the specification to the letter. The builders will have nothing to do with estimating the cost of the structures. This will be done by specialists in the architectural department. Nor will the builder nor any of the workmen have anything to do with contracts or payments of any form whatever connected with the building. The specification of the architect properly signed by him and countersigned by the head of his department, will constitute the order of the builder upon the national supply-department for building materials. All the details for the stone-cutting will be made by the architect. The builder will have nothing to do with the stone-cutters. These will be employed by the government directly at the quarries where the details of the architect will be carried out. In this manner all waste of stone and cost of transporting the rough material will be avoided. It will be the same way with the framing which will be cut and fitted at the mills.

The builder will take the place of the clerk-of-the-works of to-day, and have charge, under the architect, of all the workmen employed on the building, entirely relieving the architect of any responsibility for delays and inaccuracies not due to errors in the plans. All the workmen will, of course, be on a financial equality, and they will be subjected only to such discipline as is necessary to the proper conduct of the work. The officers will consist simply of the builder or chief of the works, and the foremen in the different trades, who will see that the men are provided with materials and that they

use these materials properly and economically, and do their duty generally. Gross carelessness and indolence will be reported and punished by reduction of remuneration and by such other means as may be found most effective.

It is likely that before Nationalism can be introduced in its complete and perfect form, machinery will have supplanted most or all of the most disagreeable parts of the builder's work, such as conveying the heavy materials from the ground to the parts of the building where they are to be finally laid. But even then there will for a long time be no lack of men incapable of doing the difficult and more intellectual parts of the construction. These will be glad of the opportunity to perform the purely mechanical operations, uneducated foreigners will, so far as the immigration laws will allow, flock to the nation which first adopts a rational system of industry and undertake such forms of labor as will be found arduous by the natives under the high grade of cultivation such a system will furnish, before suitable machinery shall have been invented as a substitute.

The kind of work which will remain after machinery and foreigners have undertaken the most arduous and mechanical parts, will be a high grade of skilled labor, involving perhaps as long a course of preparatory education and as much ability, though of a different kind, as the various professions, and deserving of as high a material reward.



MEN who would resent the slightest imputation of injustice, dishonor or cruelty in their private dealings, yet participate in a great injustice and cruelty towards their poorer or less gifted fellow beings, simply because their attention has not been called to the fact. Their opinions on all great moral and social questions are hereditary and conservative rather than independent and progressive, and the obvious and in-

evitable result of this is that these opinions do not keep pace with the progress of events.

The tremendous advances in science, invention and concentration of capital made within the last twenty years, have created a veritable revolution in industrial and social conditions. But there has been no corresponding revolution in ideas.

There is no longer free competition as formerly. Monopoly, its logical offspring, has almost strangled its progenitor, and the result is that a few men have obtained such absolute control over the rest that they are able to exact from them for the privilege of existing, a very large percentage of the product of their labor, the machinery of production being held in the grasp of the few. This is a fact which is disputed by no one and which admits of no dispute. The simple question then, is, whether this condition of things is right or wrong. If it is right, then Nationalism has no other justification than that of good policy. If it is wrong then it becomes the duty of every one as participating in that wrong to aid in uprooting it, and in substituting for it a system founded upon justice, irrespective of any selfish feelings of indifference or imaginary personal injury, which may stand in his way. But since modern civilization has admitted slavery to be wrong, the modern social system is proved to be wrong the moment we prove its inevitable consequence to be industrial and moral slavery, and the magnitude of the wrong becomes evident when we realize the magnitude of the evils such slavery induces.

Returning to our previous illustration, the descendants of the patriotic citizen, A, reduced to poverty, are able to obtain only a limited education. There are thousands of families to-day in this country who are too poor to give their children a common school education. The product of their labor is necessary for the support of the family. Thus the descendants of our citizen A are predestined to earn a miserable pittance in the street or factory, subjected to a thousand evil influences, which their overworked parents are incapable, through ignorance and want of leisure, of counteracting. The tendency is inevitably downward because the aggregate of influence resulting from extreme ignorance and poverty is evil. Living from hand to mouth, they are bound to accept any conditions imposed upon them by their employers, simply because they have no reserve funds to sustain them while seeking employment elsewhere. Misfortune leads to discouragement, and discouragement to intemperance, suicide and crime.

The descendants of B, on the other hand, are subjected to other evils influences likewise tending to degradation through precisely the opposite causes. Extreme wealth tempts to indolence, arrogance, selfishness, and general moral and physical degeneracy.

The contact of these two extremes of society breeds every form of ill feeling and stirs up the lowest passions of which human nature is capable; and if the causes which brought these extremes into existence and which foster their growth are allowed to exist very much longer, the disease in the social state will pass beyond government control and culminate in general disaster.

Nationalists believe that justice and wisdom alike point to the necessity of meeting the inevitable in a manly and straightforward manner; of admitting the injustice of the present conditions and endeavoring to effect a cure by peaceful means.

There is nothing more certain than that every individual is entitled to the full value of his labor whether mental or manual. This is only possible when the people themselves own the whole machinery of production, because so long as society sanctions the private monopoly of machinery, its owners are expected to appropriate a part of the labor of their employes as a return for the use of that machinery.

By what process did the machinery become the exclusive property of certain individuals rather than of the community as a whole?

C, D and E are scientific investigators and philosophers having a passion for the study of natural laws, purely for the knowledge itself, without reference to the application of these laws to the industrial arts, nor to their own material welfare, and, accordingly, they freely publish their discoveries for the benefit of the whole community. F is a practical mechanic quick in turning the discoveries of others to practical uses and shrewd in directing these uses to his own emolument. He closely follows the researches of C, D and E, and seizes upon the most important results which they obtain, producing by means thereof a patentable labor-saving machine whereby he is enabled to monopolize the fruit not only of his own labor, but of that of C, D and E as well, although the latter may have formed nine-tenths of the value of the machine. But the labor of C, D and E was given by them in their publications to the community, and F had no intrinsic right to that part of the machine which was due

thereto. Custom has, however, given him this right in disregard of justice.

Now C, D and E represent the whole civilized community and F an individual member thereof. Every invention or production of any kind made nominally by an individual is really the production of the *individual aided by the community, by civilization*, and that part of it which is due to civilization, by far the greater part, should clearly become the property of the community. Hence the justice of Nationalism.

Is it also wise?

All recognize the fact that a wide-spread discontent now exists among the working-classes throughout the entire civilized world, a discontent which has assumed unprecedented proportions, and is yet daily increasing; which shows itself in the formation everywhere of labor unions, and combinations of all kinds for mutual protection and concerted action; in the appearance of hundreds of books, papers and periodicals published in the interest of labor, and devoted solely to the discussion of the condition of the laborer and social wrongs; in the general agitation of the labor question in all the leading magazines and periodicals of the day; in strikes, lockouts and all kinds of labor troubles, and finally in many forms of violent insubordination, disorder, and riot.

Those who refuse to shut their eyes upon these facts, recognize that the causes for them are daily increasing, and that intelligent and prompt action should be taken to direct the great popular movement in the right channels. Leaving it to itself is equivalent to leaving it to those who are most interested in the change, and least fitted to direct it — the wage-earners. This course was tried in France a hundred years ago, and it is the part of wisdom to profit by that lesson and avoid the possibility of its repetition. Strikes and riots are expensive to the strikers as well as to the public, and had the money spent in them during the last twenty years been devoted to the wiser service of educating the people in the principles of Nationalism, our Coöperative Commonwealth might have been realized to-day.

Much as has been said by critics as to the impossibility of attaining a speedy realization of such an ideal, yet the moment we begin to reflect upon the vast economies effected by coöperation, the difficulties which at first thought appeared overwhelming begin one by one to vanish. We, are dealing, moreover, it must be remembered, not with a system in which every individual, or small body of individuals, is engaged independently in a constant conflict with all the rest, to regulate which, even partially, requires the ablest statesmanship, but rather with a system of coöperation so simple as to resemble a beautiful piece of machinery, having a thousand parts moving in perfect harmony and with irresistible power, but which can yet be guided by the simplest mechanism.

I have stated as my belief that over nine-tenths of the energy now exerted is wasted. I should also have stated that my authority for the wastes due to the item of travelling salesmen was the United States Census for 1880 and the following calculations by Mr. Edward H. Sanborn, of the United States Census Staff: "Careful estimates from a variety of reliable sources, place the number of commercial travellers in this country at 250,000. Their railroad fares, express or freight

upon baggage, hotel-bills, and incidental expenses range from \$4 to \$12 and more a day, averaging about \$6 daily. Salaries range upwards from \$900 a year. Thousands of men earn \$2,000 and \$2,500 a year; a smaller number receive salaries between \$3,000 and \$5,000, while a comparative few are paid from \$5,000 to \$15,000, and in rare instances even more. Of course, as in every field of employment, the lower salaries are vastly in the majority, and \$1,800 a year is a fair average. Let us see what these figures will give us for the cost of this single element in competition. The expenses of 250,000 travelling men at \$6 a day amount to \$1,500,000 daily, or \$547,500,000 in 365 days. Then the salaries of 250,000 men averaged at \$1,800 a year aggregate \$450,000,000, so that the two items of salaries and travelling expenses to be charged against the commercial traveller mount up to the astonishing total of \$997,500,000 a year. Nor is this all. In nearly every branch of business each man must be provided with his outfit of trunks, sample cases, and his more or less complete line of samples. To give accurate figures or even approximate estimates in this direction is a hopeless task and I shall not attempt it; but here are a few facts to stimulate speculation. A salesman who handles a general line of dry goods, 'notions' and 'small wares,' requires an outfit costing from \$50 to \$200, in addition to which the samples that he carries in a single year cost from \$1,000 to \$2,000. Some of these samples are sold subsequently, while others become worthless, or are lost altogether. To cover losses of this character, it is customary to make an allowance of thirty-three and one-third per cent, of the actual cost of the samples. Now it may readily be seen that a concern employing fifty to a hundred travelling salesmen — and there are many at the latter figure — is under an enormous expense in reaching its customers, not to mention such minor matters as store expenses, interest upon capital, etc. This item of over \$1,000,000,000 charged annually to the account of the travelling man, is paid by the purchaser at retail, or consumer. And the expensive luxury of this form of competition brings neither advantage to the purchaser, nor profit to the merchant, in the long run. Were there not a travelling salesman upon the road to-day, the aggregate sales of merchandise would be likely as large as at present, and at lower prices the merchant would reap even greater profits than he now makes. The aggregate volume of business represents what is necessary to supply the people's wants, and with or without travelling salesmen the wants of the people will be supplied. The travelling salesman influences the aggregate volume of business but little, one way or the other. His only accomplishment is to enhance the cost of needful commodities and to cultivate extravagance, by forcing the sale of goods not actually needed by the purchasers. But so long as one firm sends out its travellers, others and all must do likewise."

Accordingly, taking into consideration all these great wastes of the competitive system and all the possible gains in productiveness which general coöperation will permit as suggested in these pages, I believe that the increase of National wealth through Nationalism will be nearer *twenty* than *ten fold*. Should a more exhaustive study in this direction aided by more accurate and comprehensive census reports prove that this belief is well founded, then will it follow that a *single*

year's production under Nationalism will be more than sufficient to pay for all the plant needed by the Nation for conducting its own business. The problem of the practical introduction of Nationalism will then be viewed in a new light. The substitution of a different system of industry will be no longer a question of possibility or advisability, but will become a question of method.¹

Since the work must be done without disturbing the wheels of industry, severing social ties, or doing injustice to any individual, it will be necessary to make use of the existing industrial machinery at first, gradually supplanting this by better as convenience and experience dictate.

The acquisition by the people of the means of production can be accomplished by existing methods, by purchase at assessed valuation or by right of eminent domain, payment being made in bonds, the details of the transaction being regulated somewhat after the manner of the formation of the great combinations and trusts of to-day. In the purchase of railroad and other stock and bonds which rest on Government franchise, the value of the grants and franchise will be included in the amount paid, since these franchises, once granted by the Government and included in the market value of such stock, and afterwards purchased in good faith by the public, have become as fairly the property of these purchasers as any other objects of value connected with the property, and a gift or promise made by our Government should be held sacred even though such gift or promise may have, in the opinion of some, been unwisely made.

In the same way such land as may be required, will be purchased at its actual market value, proved by careful appraisal.

Factories and mercantile buildings will evidently at once become useless to their present owners, since no one could compete with a Government capable of paying the large dividend to its employés, which we have shown to result from so gigantic a combination, and these buildings will be gladly turned over to the new administration for their value. But dwellings and improved estates held for personal use and not for speculation, with which the owners are unwilling to part, will simply be valued and left in their possession. The amount of land now so held for personal use as homes, however, is very small compared with the vast territory held for farming, forestry, railroads, manufacturing and speculative purposes, all of which could be purchased by the nation at a fair valuation.

A portion of our immensely increased annual wealth production could be devoted each year to redeeming these bonds. Thus every property-holder would receive the full value of his property in Government securities exchangeable for any kind of wealth produced by the nation.

During the time which will intervene between the substantial acceptance by the people of the principles of Nationalism, and its practical

¹ All our calculations, have been based on the amount of wealth production at the time of the Census of 1880. It is well-known that in the last ten years machinery has immensely increased the economy of production, and, under the favorable auspices of Nationalism, such increase must be very much more rapid. These figures and considerations would place the annual income of each adult individual, man and woman, under Nationalism at considerably over the equivalent of six thousand dollars, and would permit of a great diminution of the length of the average working-day.

adoption in its entirety, the industries successively placed under National Control will necessarily be administered more and more on the principles of reformed civil service, because it will become more and more for the interest of all to have this so.

The nationalization of all industries will bring about such reform as an inevitable consequence, because it will substitute for the present cause of corruption — *private* monopoly — a *public* monopoly wherein the interests of all will be identical, a monopoly which in directing legislation and acting for itself will thereby necessarily act for the whole people.

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